THE Journal OF THE Kansas Medical Society

AUGUST
1958

VOL LIX
NO VIII

STORMONT MEDICAL LIBRARY
TOPEKA, KANSAS
AUG 15 1958

"80% of epileptics... can, with appropriate care and encouragement, lead a normal life"*

* Lord Cohen of Birkenhead: *British M.J.* 1:672, 1958.

for appropriate medical management of epilepsy

the Parke-Davis family of anticonvulsants

...an anti-epileptic for every clinical need

- complete control of seizures in many patients
- reduced incidence and severity of seizures in many others

for grand mal and psychomotor seizures

Dilantin®

Sodium (diphenylhydantoin sodium, Parke-Davis) is supplied in many forms —including Kapseals® of 0.03 Gm. and 0.1 Gm. in bottles of 100 and 1,000.

Phelantin®

Kapseals (Dilantin 100 mg., phenobarbital 30 mg., desoxyephedrine hydrochloride 2.5 mg.), bottles of 100.

for the petit mal triad

Celontin®

Kapseals (methsuximide, Parke-Davis) 0.3 Gm., bottles of 100.

Milontin®

Kapseals (phensuximide, Parke-Davis) 0.5 Gm., bottles of 100 and 1,000. Suspension, 250 mg. per 4-cc. teaspoon, 16-ounce bottles.

PARKE, DAVIS & COMPANY · DETROIT 32, MICHIGAN

48338

THE JOURNAL
of the
KANSAS MEDICAL SOCIETY

Volume LIX AUGUST, 1958 Number 8

TABLE OF CONTENTS

Original Articles

Oral Diuril: Its Use in Therapy of Chronic Heart Failure—L. E. Peckenschneider, M.D., and Charles Pokorny, M.D., Halstead . . 347

Bladder Action: A Study of Effects of Banthine and Urecholine—Eldon M. Fillman, M.D., Topeka 352

Low Back Pain: Emotional Factor as a Cause —Prescott W. Thompson, M.D., Topeka 354

Mental Deficiency: A Proposal for Care and Prevention—Charles R. Poser, M.D., and Franklin R. Miller, M.D., Kansas City . 356

Clinicopathological Conference: Prolonged, Progressive Cough and Dyspnea Leading to Intractable Heart Failure 368

Editorials

Experience 361

Hospital Usage 361

Population Trends 362

Miscellaneous

Maternal Death Study—Case History . . 359

President's Page 360

Uniform Reporting—Committee on Child Welfare 363

Medico-Legal Problems 377

Editorial Board

ORVILLE R. CLARK, M.D., *Editor,* Topeka

DAVID E. GRAY, M.D., Topeka

RICHARD GREER, M.D., Topeka

DWIGHT LAWSON, M.D., Topeka

JOHN A. SEGERSON, M.D., Topeka

Associate Editors

DONALD P. TREES, M.D., Wichita

VERNON E. WILSON, M.D., Kansas City

PAULINE FARRELL, Managing Editor and Advertising Manager

OLIVER E. EBEL, Business Manager
Executive Office: 315 West Fourth Street, Topeka

Ownership: The Journal is a non-profit publication owned and published monthly by the Kansas Medical Society.

Subscription: A year's subscription to the Journal is included in membership in the Kansas Medical Society, with $2.00 of each member's dues apportioned to the Journal. Rates to others, except in foreign countries, $4.00 per year or 60c per copy.

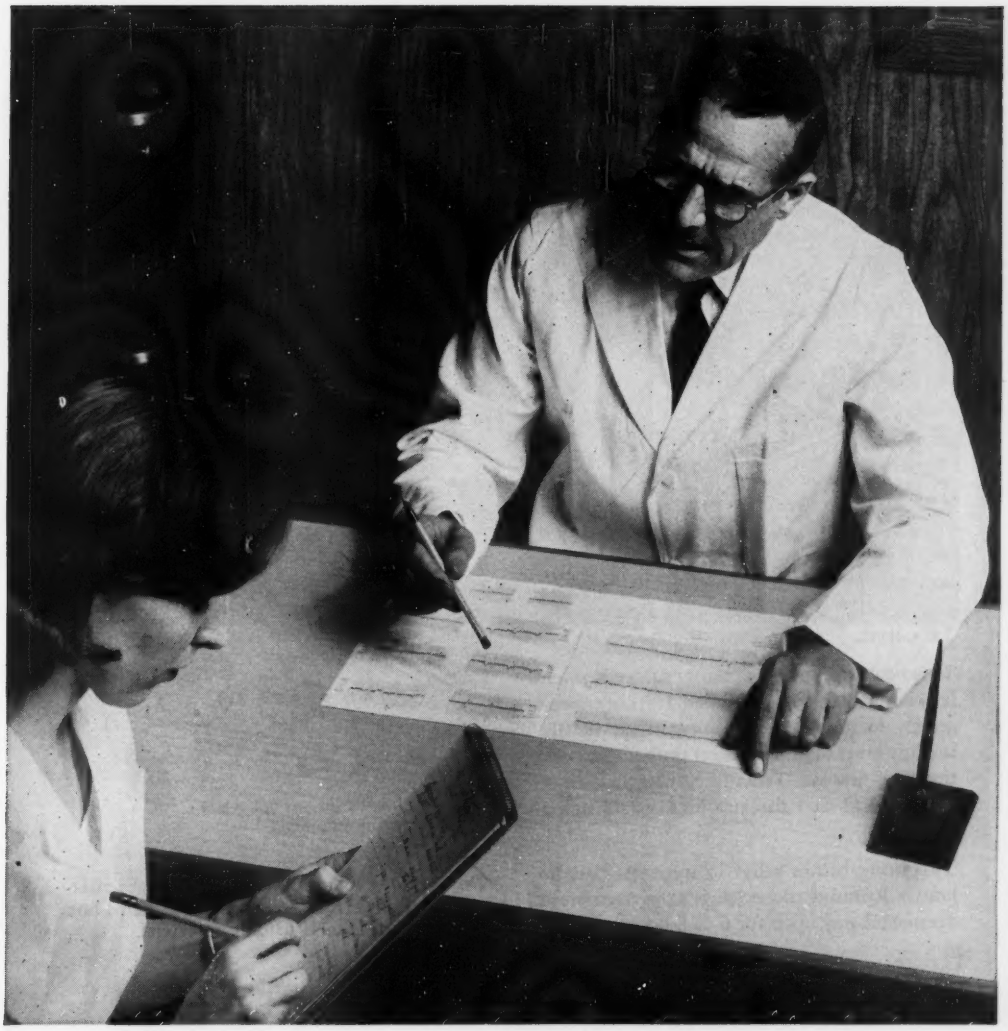
Material: Scientific articles, editorials, and data of general interest are invited from all members. Articles are to be submitted on condition that they are contributed solely to this publication. A right is reserved to reject any material deemed unsatisfactory.

Manuscripts: Only manuscripts that are typewritten on one side, double spaced, and original copies can be accepted. Manuscripts will be returned upon request.

Advertising: All advertising contracts, and all copy from advertisers under contract are subject to approval of the editorial board. Copy should be received by the 15th of the month immediately preceding the month of publication.

Non-Responsibility: Although an effort is made to publish only accurate articles and legitimate advertisements, the Journal denies legal responsibility for any statements, opinions, or advertisements appearing under the names of contributors or concerns.

Entered as second-class matter at the post office at Fulton, Missouri, June 19, 1953, under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on July 2, 1918. Office of Publication: 1201-05 Bluff Street, Fulton, Missouri.



"Nocturia and orthopnea have disappeared since he's on NEOHYDRIN—and he's edema-free when he wakes in the morning."

oral
organomercurial
diuretic

TABLET
NEOHYDRIN®
BRAND OF CHLORMERODRIN

LAKESIDE

running noses . . .

and other hay fever symptoms

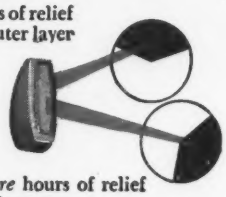
TRIAMINIC stops rhinorrhea, congestion and other distressing symptoms of summer allergies, including hay fever. Running nose, watery eyes and sneezing are best relieved by antihistamine *plus* decongestant action—systemically—with TRIAMINIC.

This new approach frequently succeeds where less complete therapy has failed. It is not enough merely to use histamine antagonists; ideally, therapy must be aimed also at the congestion of the nasal mucosa. Triaminic provides such effective combined therapy in a single timed-release tablet.

TRIAMINIC brings relief in minutes—lasts for hours. Running noses stop, congested noses open—and stay open for 6 to 8 hours.

Triaminic provides around-the-clock freedom from allergic congestion with just one tablet t.i.d. because of the special timed-release design.

first—3 to 4 hours of relief from the outer layer



then—3 to 4 *more* hours of relief from the inner core

Dosage: One tablet in the morning, mid-afternoon and at bedtime. In postnasal drip, one tablet at bedtime is usually sufficient.

Each timed-release TRIAMINIC Tablet contains:

Phenylpropanolamine HCl	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

TRIAMINIC FOR THE PEDIATRIC PATIENT

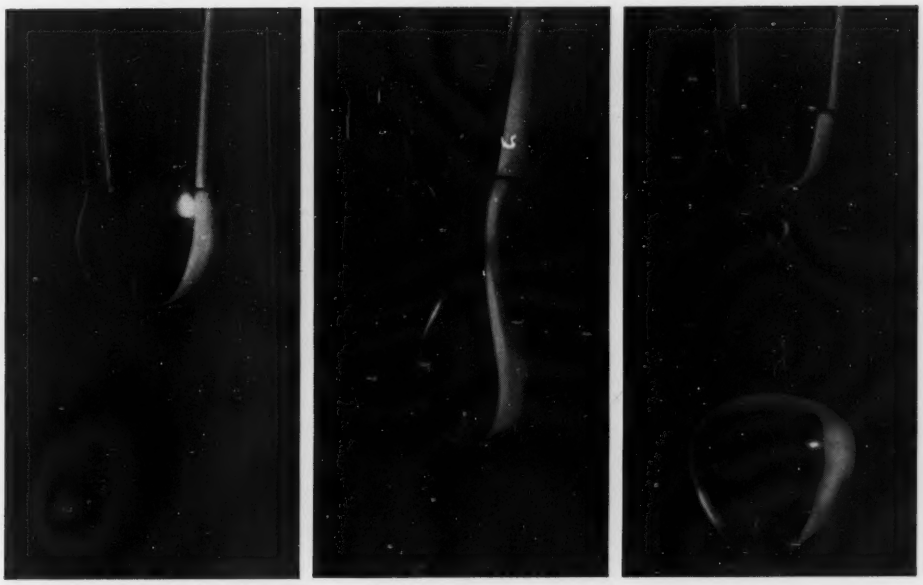
TRIAMINIC Juvelets*, providing easy-to-swallow half-dosages for the 6- to 12-year-old child, with the timed-release construction for prolonged relief.

*Trademark.

TRIAMINIC Syrup, for those children and adults who prefer a liquid medication. Each 5 ml. teaspoonful is equivalent to ¼ Triaminic Tablet or ½ Triaminic Juvelet.

Triaminic®

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska • Peterborough, Canada



In Biliary Distress

ZANCHOL®

Improves Flow and Color of Bile

Zanchol (brand of florantyrone), a distinct chemical entity unrelated to the bile salts, provides the medical profession with a new and potent hydrocholeretic for treating disorders of the biliary tract.

The high degree of therapeutic activity of this new compound and its negligible side reactions yield distinct clinical advantages.

- Zanchol produces a bile low in sediment.
- Zanchol enhances the abstergent quality of bile.
- Zanchol produces a deep, brilliant green bile, regardless of its original color, suggesting improved hepatic function.
- Zanchol improves the flow and quantity of bile without increasing total bile solids.

Bile with these qualities minimizes biliary stasis, reduces sediment and debris in the bile ducts and discourages the ascent of infection.

For these reasons ZANCHOL has shown itself to be a highly valuable agent in chronic cholecystitis, cholangitis and care of patients following cholecystectomy.

Administration: One tablet three or four times a day. Zanchol is supplied in tablets of 250 mg. each. G. D. Searle & Co., Chicago 80, Illinois. Research in the Service of Medicine.

SEARLE

with new

CARTRAX*

PETN + ATARAX®

(PENTAERYTHRITOL TETRANITRATE) (BRAND OF HYDROXYZINE)

why PETN? *For cardiac effect:* PETN is ". . . the most effective drug currently available for prolonged prophylactic treatment of angina pectoris."[1] Prevents about 80% of anginal attacks.

why ATARAX? *For ataractic effect:* One of the most effective—and probably the safest—of tranquilizers, ATARAX frees the angina patient of his constant tension and anxiety. Ideal for the on-the-job patient. And ATARAX has a unique advantage in cardiac therapy: it is anti-arrhythmic and non-hypotensive.

why combine the two? *For greater therapeutic success:* In clinical trials, CARTRAX was demonstrably superior to previous therapy, including PETN alone. Specifically, 87% of angina patients did better. They were shown to suffer fewer attacks . . . require less nitroglycerin . . . have increased tolerance to physical effort . . . and be freed of cardiac fixation.

1. Russek, H. I.: Postgrad. Med. *19*:562 (June) 1956.

Dosage and Supplied: Begin with 1 to 2 yellow CARTRAX "10" tablets (10 mg. PETN plus 10 mg. ATARAX) 3 to 4 times daily. When indicated this may be increased by switching to pink CARTRAX "20" tablets (20 mg. PETN plus 10 mg. ATARAX.) For convenience, write "CARTRAX 10" or "CARTRAX 20." In bottles of 100.

CARTRAX should be taken 30 to 60 minutes *before* meals, on a continuous dosage schedule. Use PETN preparations with caution in glaucoma.

ROERIG

NEW YORK 17, NEW YORK
Division, Chas. Pfizer & Co., Inc.

*Trademark

A Vacation from Hay Fever is a Real Vacation

ANYWHERE – ANYTIME

Just a "poof" of fine **NTZ** *spray brings relief* **IN SECONDS, FOR HOURS**

NTZ provides day and night relief from stuffy, sneezing, running noses and watery eyes.

NTZ is a potentiated, balanced combination of these well known synergistic compounds:

Neo-Synephrine® HCl, 0.5%
– dependable vasoconstrictor and decongestant.

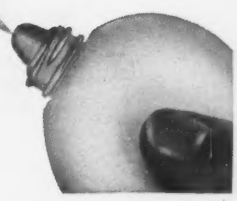
Thenfadil® HCl, 0.1%
– potent topical antihistaminic.

Zephiran® Cl, 1:5000
– antibacterial wetting agent and preservative.

NTZ®

NASAL SPRAY

Supplied in leakproof, pocket size squeeze bottles of 20 cc.



Winthrop LABORATORIES
New York 18, N. Y.

NTZ, Neo-Synephrine (brand of phenylephrine), Thenfadil (brand of thenyldiamine), and Zephiran (brand of benzalkonium, as chloride, refined), trademarks reg. U.S. Pat. Off.

with new

CARTRAX*

PETN + ATARAX®

(PENTAERYTHRITOL TETRANITRATE) (BRAND OF HYDROXYZINE)

why PETN? *For cardiac effect:* PETN is ". . . the most effective drug currently available for prolonged prophylactic treatment of angina pectoris."[1] Prevents about 80% of anginal attacks.

why ATARAX? *For ataractic effect:* One of the most effective—and probably the safest—of tranquilizers, ATARAX frees the angina patient of his constant tension and anxiety. Ideal for the on-the-job patient. And ATARAX has a unique advantage in cardiac therapy: it is anti-arrhythmic and non-hypotensive.

why combine the two? *For greater therapeutic success:* In clinical trials, CARTRAX was demonstrably superior to previous therapy, including PETN alone. Specifically, 87% of angina patients did better. They were shown to suffer fewer attacks . . . require less nitroglycerin . . . have increased tolerance to physical effort . . . and be freed of cardiac fixation.

1. Russek, H. I.: Postgrad. Med. *19*:562 (June) 1956.

Dosage and Supplied: Begin with 1 to 2 yellow CARTRAX "10" tablets (10 mg. PETN plus 10 mg. ATARAX) 3 to 4 times daily. When indicated this may be increased by switching to pink CARTRAX "20" tablets (20 mg. PETN plus 10 mg. ATARAX.) For convenience, write "CARTRAX 10" or "CARTRAX 20." In bottles of 100.

CARTRAX should be taken 30 to 60 minutes *before* meals, on a continuous dosage schedule. Use PETN preparations with caution in glaucoma.

ROERIG

NEW YORK 17, NEW YORK
Division, Chas. Pfizer & Co., Inc.

*Trademark

A Vacation from Hay Fever is a Real Vacation

ANYWHERE – ANYTIME

Just a "poof" of fine **NTZ** *spray brings relief* IN SECONDS, FOR HOURS

NTZ provides day and night relief from stuffy, sneezing, running noses and watery eyes.

NTZ is a potentiated, balanced combination of these well known synergistic compounds:

Neo-Synephrine® HCl, 0.5%
– dependable vasoconstrictor and decongestant.

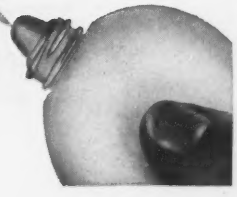
Thenfadil® HCl, 0.1%
– potent topical antihistaminic.

Zephiran® Cl, 1:5000
– antibacterial wetting agent and preservative.

NTZ®

NASAL SPRAY

Supplied in leakproof, pocket size squeeze bottles of 20 cc.



Winthrop LABORATORIES
New York 18, N. Y.

NTZ, Neo-Synephrine (brand of phenylephrine), Thenfadil (brand of thenyldiamine), and Zephiran (brand of benzalkonium, as chloride, refined), trademarks reg. U.S. Pat. Off.

to relieve edema of

DIURIL®

CHLOROTHIAZIDE

FINNERTY, F. A., Buchholz, J. H. and Tuckman, J.: J.A.M.A. 166:141, Jan. 11, 1958.

DIURIL (Chlorothiazide) given alone to 85 patients, ". . . caused an excellent diuresis, with reduction of edema, weight, blood pressure, and albuminuria. . . . The average effective dose was found to be 1 Gm. per day by mouth. . . . The usually excellent response coupled with the absence of significant toxicity and lack of development of drug resistance makes chlorothiazide ideal for the prevention and treatment of toxemia."

DOSAGE: one or two 500 mg. tablets of DIURIL once or twice a day.

SUPPLIED: 250 mg. and 500 mg. scored tablets DIURIL (chlorothiazide); bottles of 100 and 1,000.

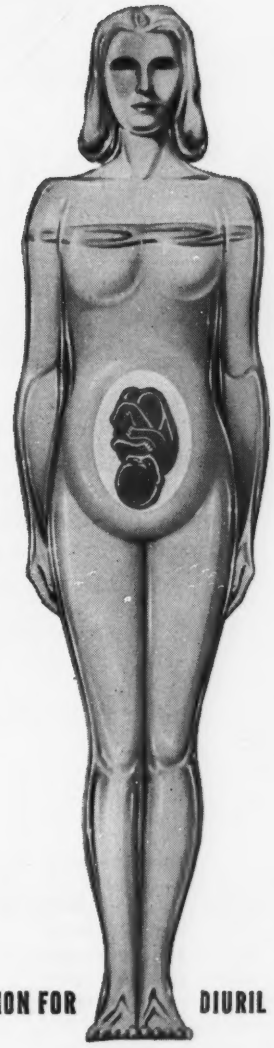
DIURIL is a trademark of Merck & Co., Inc.

©1958 Merck & Co., Inc.

MERCK SHARP & DOHME Division of MERCK & CO., INC., Philadelphia 1, Pa. MSD

pregnancy

....caused an excellent diuresis, with reduction of edema, weight, blood pressure, and albuminuria...."



ANY INDICATION FOR DIURESIS IS AN INDICATION FOR DIURIL

- postoperatively
- in pregnancy when vomiting is persistent
- following neurosurgical diagnostic procedures
- in infections, intra-abdominal disease, and carcinomatosis
- after nitrogen mustard therapy

for nausea and vomiting

VESPRIN

Squibb Trifluprom azine

- provides prompt, potent, and long-lasting control
- capable of depressing the gag reflex
- effective in cases refractory to other potent antiemetic agents
- may be given intravenously, intramuscularly and orally
- no pain or irritation on injection

ANTIEMETIC DOSAGE:
Intravenous: 8 mg. average single dose
Dosage range 2-10 mg.
Intramuscular: 15 mg. average single dose
Dosage range 5-15 mg.
If subsequent parenteral dose is needed, one-half the original dose will usually suffice
Oral: 10-20 mg. initially; then 10 mg. t.i.d.

SUPPLY:
Parenteral solution – 1 cc. ampuls (20mg./cc.)
Oral tablets – 10 mg., 25 mg., 50 mg., in bottles of 50 and 500

SQUIBB *Squibb Quality – The Priceless Ingredient*

"VESPRIN" ® IS A SQUIBB TRADEMARK

in the Menopause

triple benefits

first relieves apprehension, anxiety and irritability

second restores endocrine balance; relieves vasomotor and metabolic disturbances

third relaxes skeletal muscle; relieves low back pain, tension headache

Milprem®

MILTOWN® TRANQUILIZER WITH MUSCLE-RELAXANT ACTION + CONJUGATED ESTROGENS (EQUINE) ORALLY ACTIVE ESTROGEN

Each tablet contains:
Miltown (meprobamate, Wallace) . . . 400 mg.
2-methyl-2-n-propyl-1,3-propanediol dicarbamate
Conjugated Estrogens (equine) . . . . . 0.4 mg.

Supplied: Bottles of 60 tablets.

Dosage: 1 tablet t.i.d. in 21-day courses with one week rest periods; should be adjusted to individual requirements.

Literature and samples on request

WALLACE LABORATORIES, *New Brunswick, N. J.*

WHY SENSITIZE

in topical and ophthalmic infections

USE 'POLYSPORIN'®

brand

POLYMYXIN B—BACITRACIN OINTMENT

to insure broad-spectrum therapy with minimum allergenicity

For topical use: in ½ oz. and 1 oz. tubes.
For ophthalmic use: in ⅛ oz. tubes.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N. Y.

Comments by investigators on

Robaxin®

(Methocarbamol Robins, U.S. Pat. No. 2770648)

Robins

– the remarkably efficient skeletal muscle relaxant, unique in chemical formulation, and outstanding for sustained action and relative freedom from adverse side effects.

PUBLISHED REFERENCES: 1. Carpenter, E. B.: Southern Medical Journal 51:627, 1958. 2. Forsyth, H. F.: J.A.M.A. 167:163, 1958. 3. Little, J. M., and Truitt, E. B., Jr.: J. Pharm. & Exper. Therap. 119:161, 1957. 4. Morgan, A. M., Truitt, E. B., Jr., and Little, J. M.: J. Am. Pharm. Assn., Sci. Ed. 46:374, 1957. 5. O'Doherty, D. S., and Shields, C. D.: J.A.M.A. 167:160, 1958. 6. Park, H. W.: J.A.M.A. 167:168, 1958. 7. Truitt, E. B., Jr., and Patterson, R. B.: Proc. Soc. Exper. Bio. & Med. 95:422, 1957. 8. Truitt, E. B., Jr., Patterson, R. B., Morgan, A. M., and Little, J. M.: J. Pharm. & Exper. Therap. 119:189, 1957.

Supply: Tablets (white, scored), 0.5 Gm., bottles of 50 and 500.

A. H. ROBINS CO., INC., Richmond 20, Va.

Ethical Pharmaceuticals of Merit since 1878

Summary of four new published clinical studies:

Robaxin Beneficial in 95.6% of Cases of Acute Skeletal Muscle Spasm[1, 2, 5, 6]

CONDITION	NO. PATIENTS	RESPONSE			
		"marked"	moderate	slight	none
STUDY 1[1]					
Skeletal muscle spasm secondary to acute trauma	33	26	6	1	—
STUDY 2[2]		"pronounced"			
Herniated disc	39	25	13	—	1
Ligamentous strains	8	4	4	—	—
Torticollis	3	3	—	—	—
Whiplash injury	3	2	1	—	—
Contusions, fractures, and muscle soreness due to accidents	5	3	2	—	—
STUDY 3[5]		"excellent"			
Herniated disc	8	6	2	—	—
Acute fibromyositis	8	8	—	—	—
Torticollis	1	—	—	1	—
STUDY 4[6]		"significant"			
Pyramidal tract and acute myalgic disorders	30	27	—	2	1
TOTALS	138	104 (75.3%)	28 (20.3%)	4	2

THE JOURNAL
American Medical Association

"In the author's clinical experience, methocarbamol has afforded greater relief of muscle spasm and pain for a longer period of time without undesirable side effects or toxic reactions than any other commonly used relaxants . . ."[2]

THE JOURNAL
American Medical Association

"An excellent result, following methocarbamol administration, was obtained in all patients with acute skeletal muscle spasm."[5]

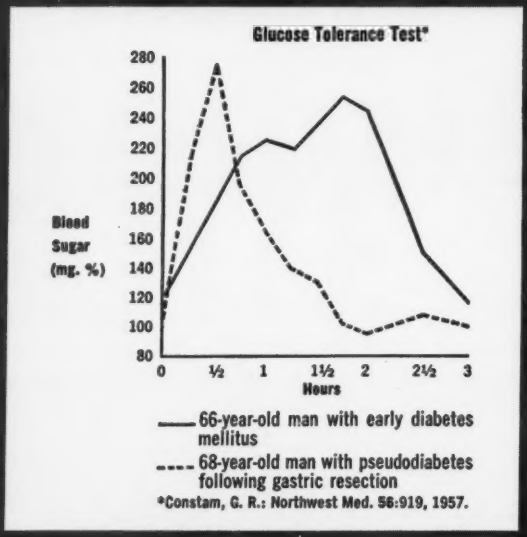
THE JOURNAL
American Medical Association

"In no instance was there any significant reduction in voluntary strength or intensity of simple reflexes."[6]

Southern Medical Journal

"This study has demonstrated that methocarbamol (Robaxin) is a superior skeletal muscle relaxant in acute orthopedic conditions."[1]

AN
AMES
CLINIQUICK™
CLINICAL BRIEFS
FOR MODERN PRACTICE



besides diabetes, what diseases may cause symptoms of polyuria, polydipsia, increased fatigability and loss of weight?

Various renal diseases with isosthenuria, portal obstruction, functional dipsomania, hyperparathyroidism, acromegaly, primary aldosteronism, chronic mercury poisoning, hypervitaminoses A or D, Hand-Schüller-Christian lipoidosis, fructosuria, pentosuria and sucrosuria.*

COLOR-CALIBRATED CLINITEST® BRAND *Reagent Tablets*

the STANDARDIZED urine-sugar test for reliable quantitative estimations

- full color calibration, clear-cut color changes
- established "plus" system covers entire critical range
- standard blue-to-orange spectrum long familiar to diabetics
- unvarying, laboratory-controlled color scale

AMES COMPANY, INC • ELKHART, INDIANA
Ames Company of Canada, Ltd., Toronto

46859

when eating moves outdoors . . .

CREMOSUXIDINE®

SULFASUXIDINE® SUSPENSION WITH KAOLIN AND PECTIN

CONTROLS "SUMMER COMPLAINT"

For people at work or on vacation, "summer complaint" is an annoying hazard of warm weather. Changes in routine or in eating or drinking habits can cause diarrhea and ruin summer days.

CREMOSUXIDINE gives prompt control of seasonal diarrhea by providing antibacterial and antidiarrheal benefit. It detoxifies intestinal irritants and soothes inflamed mucosa.

Chocolate-mint flavored CREMOSUXIDINE is so pleasant to take too!

CREMOSUXIDINE and SULFASUXIDINE are trade-marks of Merck & Co., Inc.

MSD MERCK SHARP & DOHME
DIVISION OF MERCK & CO., Inc., PHILADELPHIA 1, PA.

X-RAYS SHOW HOW ONE PYRIBENZAMINE® LONTAB®

relieves allergy all day or all night

The unretouched X-ray films show how Lontabs release medication in the digestive tract. So that the prolonged erosion of the Lontab core could be visualized by X-ray, subject was given 10 Lontabs, each containing 100 mg. of a radiopaque substance in place of Pyribenzamine.

With its unique formulation, the Pyribenzamine Lontab not only relieves allergy symptoms promptly, but sustains relief as long as 12 hours.

Special outer shell releases 33 mg. Pyribenzamine hydrochloride within 10 minutes.

Unique core releases approximately 18 mg. Pyribenzamine hydrochloride the 1st hour, approximately 50 mg. from the 2nd to the 12th hour.

SUPPLIED: Pyribenzamine *Lontabs* — full-strength — 100 mg. (light blue).

NOW AVAILABLE: Pyribenzamine *Lontabs* — half-strength — 50 mg. (light green) — for children over 5 and for adults who require less antiallergic medication.

PYRIBENZAMINE® hydrochloride (tripelennamine hydrochloride CIBA)
LONTABS® (long-acting tablets CIBA)

C I B A SUMMIT, N. J.

2 hours Lontabs are in the stomach and small bowel. Release of core substance is well under way.

4 hours Lontabs are in the ileum and cecum as core has steadily eroded.

8 hours Lontabs are still visible as substance of core continues to be released.

you and your patient
can see the improvement

with
METIMYD®

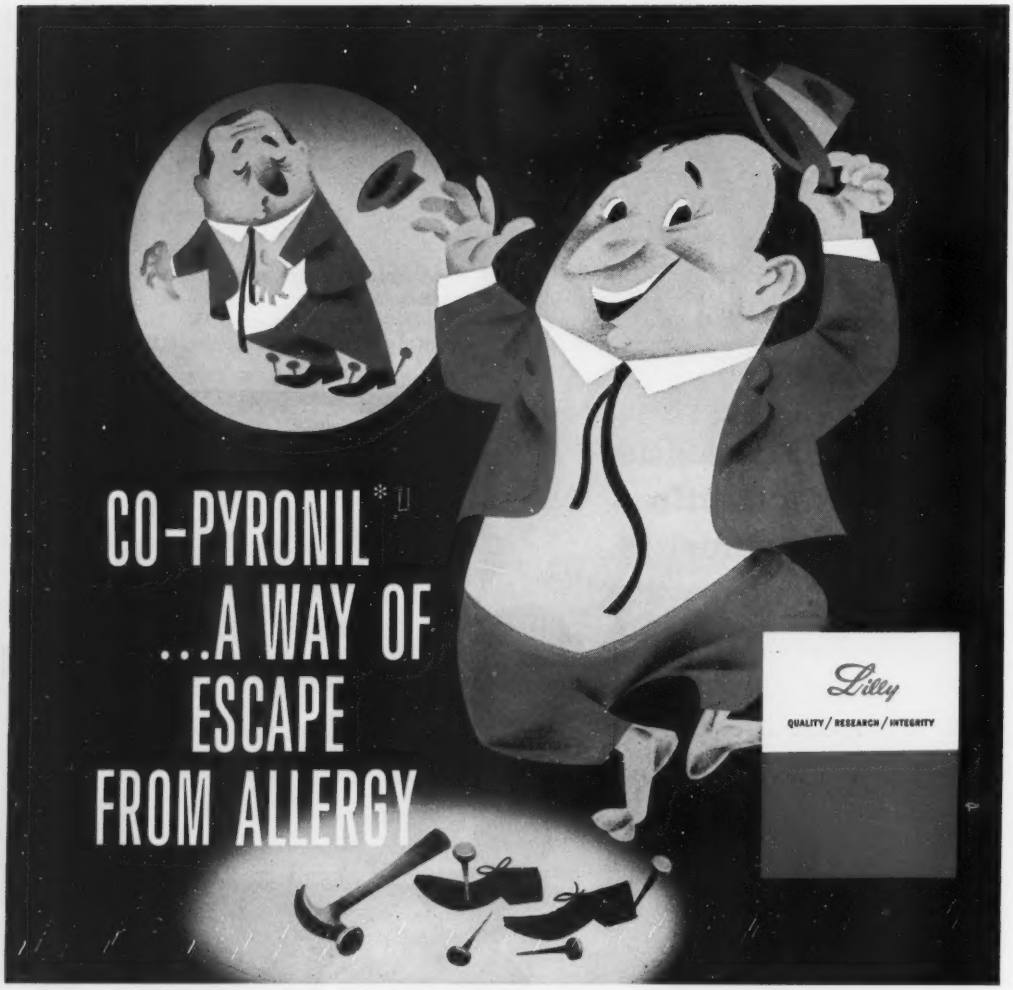
Ophthalmic Suspension
prednisolone, 0.5%,
plus sulfacetamide sodium, 10%
Ointment with Neomycin, 0.25%

in blepharitis, conjunctivitis, episcleritis, keratitis, meibomitis and other external eye conditions

- prednisolone effectively checks inflammation and allergy
- sulfacetamide sodium, with its wide-spectrum antibacterial range, controls infections caused by common eye pathogens
- addition of neomycin sulfate to prednisolone and sulfacetamide sodium in METIMYD Ointment broadens the antibacterial spectrum; the ointment also assures sustained therapeutic action during the night

SCHERING CORPORATION • BLOOMFIELD, NEW JERSEY *Schering*

MM-J-178



. . . acts fast to provide unusually long-lasting relief

'Co-Pyronil' combines a long-acting and a short-acting antihistamine with a synergistic sympathomimetic. It usually begins to combat symptoms within fifteen to thirty minutes and eliminates them for as long as twelve hours. Thus you can give your hay-fever patients and other allergy victims remarkably complete relief on a dosage of only 2 or 3 pulvules daily.

*'Co-Pyronil' (Pyrrobutamine Compound, Lilly)

Prescribe 'Co-Pyronil' in attractive green-and-yellow pulvules for adults; in tiny red pediatric pulvules or tasty suspension for children.

Each Pulvule 'Co-Pyronil' provides:

'Pyronil' (Pyrrobutamine, Lilly)	15 mg.
'Histadyl' (Thenylpyramine, Lilly) . .	25 mg.
'Clopane Hydrochloride' (Cyclopentamine Hydrochloride, Lilly) . . .	12.5 mg.

POLIO VACCINE Lilly

ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U.S.A.

858011

The JOURNAL *of the*
KANSAS MEDICAL SOCIETY

Copyright, 1958, by the Kansas Medical Society

Volume LIX **AUGUST, 1958** **No. 8**

Oral Diuril

Its Use in Therapy of Chronic Heart Failure

L. E. PECKENSCHNEIDER, M.D., *and*
CHARLES POKORNY, M.D., *Halstead*

Modern therapy, including the use of digitalis preparations, low sodium diet, less restriction of activity, and at times anticoagulant therapy, has greatly increased the well being of patients with chronic heart failure. Elimination of edema with its retention of sodium and chlorides has, for the most part, been dependent upon the injection of mercurial diuretics. To better accomplish this result, oral diuretics of the mercurials, xanthines, carbonic anhydrase inhibitors, acidifying salts, and cation exchange resins have been used with some measure of success.

Recently chlorothiazide,* a substituted benzothiadiazine compound with a free sulfamyl group, has been introduced. This agent, when given to animals, alters renal secretion of sodium, potassium, and chlorides. It is a most effective diuretic agent when given orally. In abnormal fluid retention associated with heart failure and other diseases, it brings about electrolyte secretions. In heart failure it has been shown to bring about loss of abnormal fluid retention, with some alteration in the electrolytes of the body. According to Freis and associates,[2] no tolerance to repeated dosage is acquired even when the drug is given over a prolonged period of time.

During the past nine months we have been particularly interested in the effect of chlorothiazide as an adjunct in the treatment of cardiac failure, hypertension, and other diseases with abnormal retention of fluid. Recently Fishman and associates[3] reported an oliguric patient with a rising blood urea nitrogen who became anuric after intravenous chlorothiazide, but who recovered after dialysis. Because of this we have not used chlorothiazide in a patient with an elevated rising blood urea nitrogen.

In our group of 100 patients treated for fluid retention and hypertension, we have found no contraindication for the use of the drug. When an occasional patient complained of nausea, we discontinued use of the drug for a day and then were able to resume administration. We had one patient who complained of weakness during diuresis, after a total of 1 gram of the drug had been given. This patient refused to try it again.

In some patients there has been a decrease in the serum sodium, potassium, and chloride. However, we have not found these values assuming subnormal levels. Nevertheless, because of early reports of reduction in potassium, we have insisted that our patients take extra orange juice as a potassium supplement.

Laragh and associates[4] report hypokalemia and hypochloremia occurring frequently in patients with cirrhosis of the liver. For this reason, patients who

Diuril has been found to be an effective oral diuretic in cases of edema due to heart failure with retention of sodium chloride. In 1 gram doses, we have as yet observed no toxic effects. Six case reports are presented.

* Diuril® is a trademark of Merck & Co., Inc. Chlorothiazide was supplied through the courtesy of John R. Beem, M.D.

have evidence of liver disease must be watched more carefully than others.

Bayliss[5] states that in edematous patients in long term studies, sodium and chloride are eliminated in approximately equimolar quantities, the serum bicarbonate level remaining constant. Hypochloremic alkalosis was not encountered. Potassium loss was a problem only in chronically ill patients on rigid sodium restriction who were receiving continuous chlorothiazide. In normal subjects 1 gram of chlorothiazide orally is as potent as 2 cc. of mersalyl by injection.

The onset of action of chlorothiazide is rapid, occurring within two hours after oral administration. The peak is between 4 to 6 hours, with the major action being complete in 6 to 8 hours, though there may be some effect up to 12 hours. The major saluretic and diuretic effect of the compound is over a 6-to 12-hour period. Thus it is possible to space dosage of the drug so that the patient may enjoy uninterrupted sleep.

Beyer[6] reports that while chlorothiazide has the structure of a carbonic anhydrase inhibitor, it has an enhancing effect on salt and water excretion comparable to that of a potent organomercurial diuretic. Chlorothiazide causes no change in urinary pH, no metabolic acidosis and has continuous effectiveness.

If the sulfamyl group is blocked by alkalization or substitution, it becomes inactive. It is active under experimental ammonium chloride acidosis and sodium bicarbonate alkalosis. The compound is of low toxicity when administered in either acute or chronic cases.

While chlorothiazide is capable of producing electrolyte imbalance as well as alkalosis in some patients, we have not encountered any difficulty with doses of 1 gram per day or less. It has been demonstrated that interrupted dosage lowers the chance for electrolyte imbalance.

Some investigators have reported that resistant edema in heart failure will at times respond to combined doses of chlorothiazide and a mercurial diuretic. Care must be taken not to confuse these patients with those having a low sodium syndrome.

To date there have been no reports of hematopoietic, hepatic, or central nervous system toxicity. Mild paresthesias have been observed occasionally. In addition to hypokalemia and hypochloremia occurring in patients with cirrhosis of the liver, there has been a report of erythema developing in one patient. The condition cleared when the drug was stopped.

Case Reports

Case 1. A 66-year-old man, a school custodian, was admitted to the hospital on December 2, 1957, because of shortness of breath. Three months previously he had suffered a myocardial infarct and for the past two months he had become progressively shorter of

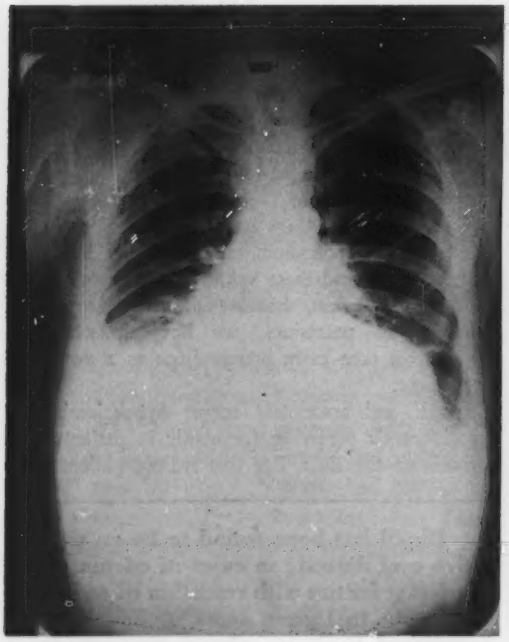


Figure 1-A. X-ray findings of Case 1, December 9, 1957.

Figure 1-B. X-ray findings of Case 1 after 18 days of Diuril.

breath, although he had been digitalized and given mercurial diuretics. His blood pressure was 132/80, pulse 100, and there was bilateral pleural effusion. He was dyspneic; the skin was cold and clammy, and there was mild cyanosis. The heart was enlarged to the left. There was limited motion of the lungs with flatness of the bases and absent breath sounds. The liver was down four fingers. Peripheral edema was 2 plus.

The patient was placed on a moderately low sodium diet and given whole leaf digitalis and chlorothiazide. On admission the hemoglobin was 12, hematocrit 38, white blood cells 10,500, sedimentation rate 46, blood urea nitrogen 16.9, and the urine contained a trace of albumin. When he was dismissed on December 12, 1957, he had lost 20½ pounds, had no pedal edema, and had only a minimal pleural effusion. Chest x-rays are shown in Figures 1-A and 1-B.

Case 2. A 68-year-old housewife entered the hospital September 1, 1957, because of marked shortness of breath and almost continuous edema of the extremities for the preceding eight months, with no relief from diuretics of any type. She had had "inflammatory rheumatism" at the age of 18. Her blood pressure was 156/86, pulse 96 and irregular; there was marked dyspnea, dependent cyanosis, and 3 plus peripheral edema. Urine was normal. There were rales in the lung bases with impaired percussion note. The heart was enlarged to the left, irregular in rate and rhythm, and presystolic apical murmurs were heard. The gallbladder contained several non-opaque stones.

The patient was placed on a low sodium, low fat diet and given digoxin 0.25 mg. and Diuril. On dismissal, September 12, 1957, the patient had lost 21 pounds and had no peripheral edema. She has continued to do well. She remained edema-free on Diuril, although before admission, weekly mercurial diuretics had been required.

Case 3. A 55-year-old man, a Rock Island railroad track supervisor, was admitted to the hospital October 30, 1957, because of progressive shortness of breath with tachycardia. Just before admission he had developed orthopnea. His pulse was 120, blood pressure 120/80; there was 4 plus edema of the extremities; the heart was enlarged, and bilateral hilar congestion of the lungs was present.

He was placed on digitoxin and Diuril three days a week. During his stay, digitalis was discontinued for a time because of nausea. The hemoglobin was 10.5, hematocrit 32, white blood cells 7,450, the sedimentation rate 65; the urine was free of albumin. At the time of his dismissal, November 6, 1957, he had lost 25 pounds. Although he has a malignant lymphoma, he has done well insofar as his cardiac status is concerned. Chest x-rays are shown in Figures 2-A and 2-B.

Case 4. A 52-year-old housewife entered the hospital October 30, 1957, because of shortness of breath,

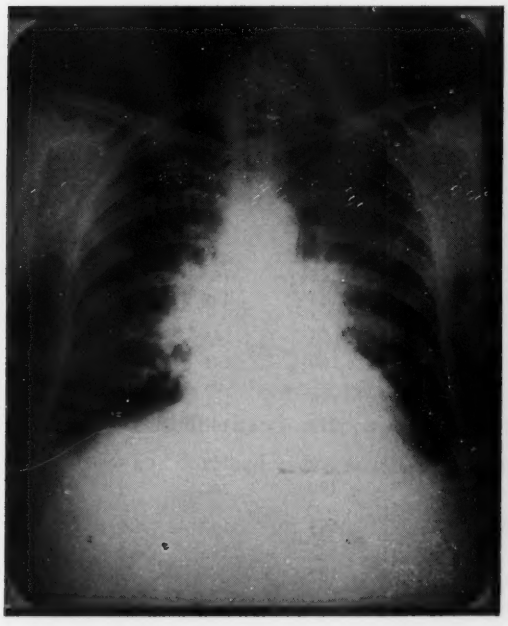


Figure 2-A. X-ray findings of Case 3, December 6, 1957.

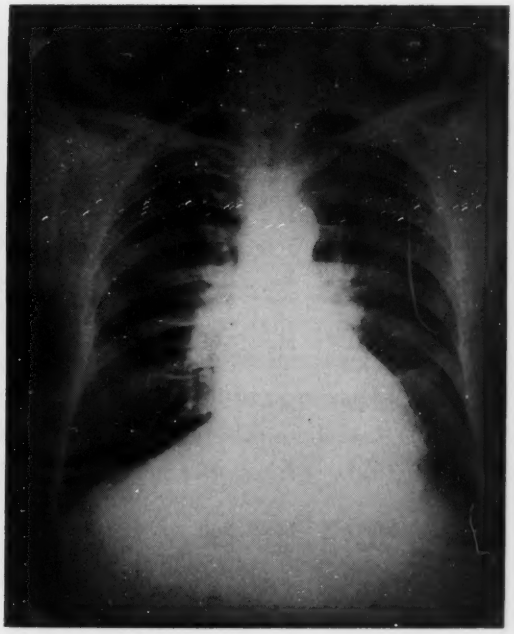


Figure 2-B. X-ray findings of Case 3 after 3 days of Diuril.

41. Re-refer to the Committee on Safety a study concerning physical standards for driver licensure, examinations to determine physical condition of applicants, and establishment of fees for such examinations.

42. Approve a program to provide training for ambulance attendants with the assistance of the Red Cross, the University of Kansas School of Medicine, and the director of safety of the Kansas Highway Department.

43. Approve implementation of the Cornell Crash Injury Project when possible.

44. Reject a plan to provide a speaker on safety, trauma, or mass disaster at each annual meeting.

45. (a) Approve the principle of state and local school health councils and (b) recommend local implementation.

46. Thank committee chairmen and members for their services to the Society.

47. Approve consultations with and referrals from licensed osteopathic physicians and surgeons who have passed medical and surgical examinations.

48. Cooperate in a nursing survey now being conducted in Kansas by the Kansas State Nurses' Association, Kansas League for Nursing, and the Kansas State Board of Nurse Registration.

49. Approve formation of a Committee on Scientific Assembly to define policy and outline a format for annual meetings, the committee to be appointed by the president and to include: (a) physicians in general practice and in the various specialties, half of whom shall be from component societies which serve as host for annual sessions, (b) the director of postgraduate education of the University of Kansas School of Medicine, and (c) (in any year after the first) at least half of the members of the committee for the preceding year.

50. Cooperate with the Kansas Heart Association in a study known as "Cardiacs Anonymous."

51. Reject a request of the Kansas Society of Anesthesiology that its officers serve also as members of the Committee on Anesthesiology.

52. Express appreciation to Dr. Burket, Dr. George F. Gsell of Wichita, and Dr. Glenn R. Peters of Kansas City for their services as members of the Reference Committee on Resolutions.

53. Express appreciation to Dr. Barrett A. Nelson, Manhattan, for exceptional leadership during his year as president of the Society.

54. (a) Suspend the rules to permit discussion of a new item of business—housing for the Society, (b) request appointment of a committee to study possible locations for a Society building, (c) request publication of the committee's findings in the JOURNAL, and (d) defer action until the 1959 meetings of the House of Delegates.

55. Commend Dr. A. W. Fegtly, Wichita, for 25 years of service as chairman of the Committee on Constitution and Rules and as parliamentarian of the House of Delegates.

56. Refer to the Committee on Scientific Assembly the report of a special committee studying the format of state meetings, under the chairmanship of Dr. Norton L. Francis, Wichita, embodying the following ideas: (a) That the first House of Delegates meeting be held on Sunday evening as a dinner meeting; (b) That the program on Monday be devoted to a full scientific meeting made up of sections, including a section on general practice; (c) That a specified time of two to three hours be set aside during the day for a visit to the exhibits, thus eliminating the maze; (d) That the second House of Delegates meeting be held on Tuesday morning as a breakfast meeting; (e) That Tuesday afternoon be devoted to a medico-socio-economic program of general interest; (f) That the president's banquet be held on Tuesday evening; (g) That Wednesday be devoted to entertainment and pleasure; (h) That the Council consider having an interim session of the House of Delegates as a means of expediting the business session of the annual meetings.

At the beginning of the meeting ballots were distributed for the election of officers, and before the meeting was concluded the committee of tellers announced results, as published in the June issue of the JOURNAL. Reports were also heard from five councilor districts on the selection of new councilors for three-year terms, also as published in the June issue of the JOURNAL.

Dr. Nelson expressed appreciation to members of the House of Delegates, to the National Guard, to the Town House Hotel, to the local committees working under Dr. Lewis G. Allen, and to the Wyandotte County Medical Society. He then turned the meeting over to Dr. Thomas P. Butcher, Emporia, new president, who adjourned the session.

Booklet on Poison

A new public service brochure, "Poison Proofing Your Home," has been prepared for distribution by Johnson and Johnson, New Brunswick, New Jersey. It dramatizes the problem of accidental chemical poisonings in children, lists common household products most responsible for poisonings, suggests ways of preventing such occurrences, and points out ways of recognizing poisoning symptoms. Copies of the brochure may be received free of charge by request to the publisher.

BOOK REVIEWS

Diagnostic Medical Parasitology. By Edward K. Markell, Ph.D., M.D., and Marietta Voge, M.A., Ph.D. Published by W. B. Saunders Company, Philadelphia. 276 pages, 115 figures with 5 in color. Price $7.00.

We have fought two wars since 1941 in tropical or subtropical climates. The returning veterans have brought rare and new disease into every area of the country and caused new interest on the part of physicians and medical technologists in parasitology. The volumes that have been available previously attempt to cover all phases of this complex subject which at best is still rather poorly understood by the practicing physician. A welter of confusing tests and a multiplicity of names for any one genus and species has not served to enlighten the clinician faced with a patient ill with an exotic disease.

The authors have prepared a concise volume filled with excellent illustrations and written clearly with a minimum of synonyms. Diagnostic methods are presented lucidly, but only the best procedures are outlined. After each organism is described in detail, brief summaries are given of the salient microscopic features which aid in diagnosis. A separate chapter outlines step by step laboratory methods in diagnosis and supplies details in the preparation of media, solutions, and reagents.

The section on intestinal protozoa is very readable with a complete discussion of *Entamoeba Histolytica.* The line drawings are clear and are supplemented by photomicrographs. Malaria is also adequately covered in the text with colored plates serving as illustrations to show the growth of the parasites. Other chapters treat specific disease in a similar clear readable manner.

Since the book is written as a diagnostic text for medical schools and for technologists, there is only sparse discussion of the clinical state, and almost no therapy is outlined. The bibliography is too brief to be of any value for the parasitologist. Despite these defects the volume is excellent as a diagnostic guide for the physician's office and for the hospital laboratory.—*W.J.R.*

A Guide to Human Parasitology. Sixth Edition. By Blacklock and Southwell. Revised by T. H. Davey. Published by Williams and Wilkins Company, Baltimore. 222 pages. Price $7.00.

Due to the minor role of disease caused by human parasites in the midwest, parasitology as taught in our medical schools is generally incomplete and most often an appendage to one of the major subjects. The midwest medical graduate is poorly equipped to meet the problem of diagnosis and treatment of parasitism when encountered.

A Guide to Human Parasitology will be found useful in the identification of parasites encountered in this locale. Written in typical crisp British style, the text is easily read and well indexed. Terminology is condensed to the practical level of the clinician. The illustrations, 119, are excellent but simple and should serve as a valuable guide to identification. A brief paragraph describing life history, pathogenicity, diagnosis, and prevention is included with each parasite. Schematic illustrations as to life cycles will prove quite valuable. Two very useful chapters on the methods of examination of materials are included. Here, concise but simplified methods of smear technique, stool concentration and preservation of materials are given.

The book is disappointing in that no suggestions as to mode of treatment are given. The chapter on the use of the microscope more properly belongs in a text for first-year biology students.

In this reviewer's opinion, this book will prove quite useful to the clinician as a brief, well-written, text for easy reference in the field of parasitology. —*L.S.F.*

Pediatric Index. Edited by Edwin F. Patton, M.D. Published by C. V. Mosby Company, St. Louis. 639 pages. Price $13.50.

This is a new type of guide to symptomatological diagnoses and current management. The author has indexed various symptoms and signs of illnesses in the first half of the book and has given the various conditions which might cause them. In the second half of the book he has listed definitive diagnoses and current management. He has attempted to be brief and has succeeded. In the process of being brief he has had to be dogmatic. I am sure that this opens him to considerable criticism, because differences of opinion arise frequently in medical practice.

The book might be helpful to someone who is not familiar with children and their problems. It is not a substitute for the well-written textbook. I am sure the author did not intend it as such, but as an easy reference against which to check one's knowledge.—*H.C.M.*

A Primer on Common Functional Disorders. By Jack W. Fleming, M.D. Published by Little, Brown

and Company, Boston. 174 pages, illustrated. Price $5.00.

The author is a practicing internist. This book is especially written for the non-psychiatrist physician who is called upon daily to deal with psychogenic disorders. A positive approach to the diagnosis of functional disorders is presented, and the principles of therapy are discussed in detail. The more common functional disorder syndromes, i.e. the hyperventilation syndrome, headache, gastric hyperacidity and peptic ulcer, irritable gastrointestional tract, obesity and overeating, allergy, backaches and gynecologic syndromes are dealt with in detail.

This book presents excellent, understandable reading material for all practitioners of medicine.—*C.C.G.*

You Can Increase Your Heart Power. By Peter J. Steincrohn, M.D. F.A.C.P. Published by Doubleday and Company, Inc., Garden City, New York. 376 pages. Price $4.95.

This volume is intended to answer questions of the public regarding many phases of cardiovascular disease but dwells primarily on coronary problems, arteriosclerosis, and high blood pressure.

The 50-page introductory section dealing with "imaginary heart trouble" contains many words of wisdom for physicians who may unwittingly cause great anxiety in the patient with minor cardiovascular symptoms. The patient is warned repeatedly that distressing signs and symptoms are often the result of a hyperirritable heart responding to outside factors and the only way to manage these difficulties is by adequate examination, evaluation, and understanding by the patient.

The chapter on coronary disease is well handled. The point is clearly made that each individual case will require individual medical handling through the acute rest phase, the reactivation stage, and return to work stage. General principles are outlined rather than specific details of medical management. Much emphasis is placed upon the philosophy of the coronary patient both in regard to myocardial infarction and angina pectoris.

The section on diet in relation to arteriosclerosis, coronary disease, and hypertension is considered excellent. The author reviews some facts on cholesterol and fats briefly but warns "Don't get diet happy." Here again general principles of weight control and adequate nutrition are emphasized without giving dietary advice based upon incomplete scientific investigation.

The hygiene of daily living in relation to heart disease discusses obesity, exposure to weather, air travel, tobacco, alcohol, sleep, fatigue, exercise, and relaxation. The author will not be popular with the recent proponents of physical fitness. He indicates that harm may result from irregular exertions of the middle-aged athletes. He advises development of habits of relaxation at an early age and that exercise as such is not essential for health.

Much of this material is presented as answers to letters written to the author through his syndicated health column. It is easy reading and with minor exceptions is considered an informative book for cardiac patients. Each chapter ends with an outlined summary of the important points covered to help the patient review as the book is read.—*G.B.W.*

Volume of Physician Visits

The American people visited their physicians during the months of July, August and September, 1957, at a rate of almost five times a year, according to data gathered through household interviews by the U. S. National Health Survey.

The report, entitled "Preliminary Report on Volume of Physician Visits, United States, July-September 1957," is the first of a continuing series. Special weekly reports on the incidence of upper respiratory diseases have been issued by the Public Health Service for some time.

Future reports in the series will deal with disability, hospitalization, injuries, chronic illnesses, and related health matters.

The report on physician visits points out that the interviews occurred at a time of year when people are normally least likely to call the doctor. The report notes that last year, however, respiratory diseases were probably at above-average levels.

Nine out of 10 of the physician visits were in the physicians' offices, the report shows.

Persons living on farms used physicians' services during the quarter at a rate of 3.6 visits a year, compared with 4.5 for the rural nonfarm population, and 5.1 for the urban population. Visits for general check-ups were somewhat less frequent for the farm population than for either of the other two residence groups.

Health Survey reports are based on continuing nationwide household interviewing conducted for the Public Health Service by the U. S. Bureau of the Census, on a representative sample of the population. The information recorded about individuals is confidential, and only statistical totals are published.

The JOURNAL *of the*
KANSAS MEDICAL SOCIETY

Copyright, 1958, by the Kansas Medical Society

Volume LIX **AUGUST, 1958** **No. 8**

Oral Diuril

Its Use in Therapy of Chronic Heart Failure

L. E. PECKENSCHNEIDER, M.D., ***and***
CHARLES POKORNY, M.D., ***Halstead***

Modern therapy, including the use of digitalis preparations, low sodium diet, less restriction of activity, and at times anticoagulant therapy, has greatly increased the well being of patients with chronic heart failure. Elimination of edema with its retention of sodium and chlorides has, for the most part, been dependent upon the injection of mercurial diuretics. To better accomplish this result, oral diuretics of the mercurials, xanthines, carbonic anhydrase inhibitors, acidifying salts, and cation exchange resins have been used with some measure of success.

Recently chlorothiazide,* a substituted benzothiadiazine compound with a free sulfamyl group, has been introduced. This agent, when given to animals, alters renal secretion of sodium, potassium, and chlorides. It is a most effective diuretic agent when given orally. In abnormal fluid retention associated with heart failure and other diseases, it brings about electrolyte secretions. In heart failure it has been shown to bring about loss of abnormal fluid retention, with some alteration in the electrolytes of the body. According to Freis and associates,[2] no tolerance to repeated dosage is acquired even when the drug is given over a prolonged period of time.

During the past nine months we have been particularly interested in the effect of chlorothiazide as an adjunct in the treatment of cardiac failure, hypertension, and other diseases with abnormal retention of fluid. Recently Fishman and associates[3] reported an oliguric patient with a rising blood urea nitrogen who became anuric after intravenous chlorothiazide, but who recovered after dialysis. Because of this we have not used chlorothiazide in a patient with an elevated rising blood urea nitrogen.

In our group of 100 patients treated for fluid retention and hypertension, we have found no contraindication for the use of the drug. When an occasional patient complained of nausea, we discontinued use of the drug for a day and then were able to resume administration. We had one patient who complained of weakness during diuresis, after a total of 1 gram of the drug had been given. This patient refused to try it again.

In some patients there has been a decrease in the serum sodium, potassium, and chloride. However, we have not found these values assuming subnormal levels. Nevertheless, because of early reports of reduction in potassium, we have insisted that our patients take extra orange juice as a potassium supplement.

Laragh and associates[4] report hypokalemia and hypochloremia occurring frequently in patients with cirrhosis of the liver. For this reason, patients who

Diuril has been found to be an effective oral diuretic in cases of edema due to heart failure with retention of sodium chloride. In 1 gram doses, we have as yet observed no toxic effects. Six case reports are presented.

* Diuril® is a trademark of Merck & Co., Inc. Chlorothiazide was supplied through the courtesy of John R. Beem, M.D.

have evidence of liver disease must be watched more carefully than others.

Bayliss[5] states that in edematous patients in long term studies, sodium and chloride are eliminated in approximately equimolar quantities, the serum bicarbonate level remaining constant. Hypochloremic alkalosis was not encountered. Potassium loss was a problem only in chronically ill patients on rigid sodium restriction who were receiving continuous chlorothiazide. In normal subjects 1 gram of chlorothiazide orally is as potent as 2 cc. of mersalyl by injection.

The onset of action of chlorothiazide is rapid, occurring within two hours after oral administration. The peak is between 4 to 6 hours, with the major action being complete in 6 to 8 hours, though there may be some effect up to 12 hours. The major saluretic and diuretic effect of the compound is over a 6-to 12-hour period. Thus it is possible to space dosage of the drug so that the patient may enjoy uninterrupted sleep.

Beyer[6] reports that while chlorothiazide has the structure of a carbonic anhydrase inhibitor, it has an enhancing effect on salt and water excretion comparable to that of a potent organomercurial diuretic. Chlorothiazide causes no change in urinary pH, no metabolic acidosis and has continuous effectiveness.

If the sulfamyl group is blocked by alkalization or substitution, it becomes inactive. It is active under experimental ammonium chloride acidosis and sodium bicarbonate alkalosis. The compound is of low toxicity when administered in either acute or chronic cases.

While chlorothiazide is capable of producing electrolyte imbalance as well as alkalosis in some patients, we have not encountered any difficulty with doses of 1 gram per day or less. It has been demonstrated that interrupted dosage lowers the chance for electrolyte imbalance.

Some investigators have reported that resistant edema in heart failure will at times respond to combined doses of chlorothiazide and a mercurial diuretic. Care must be taken not to confuse these patients with those having a low sodium syndrome.

To date there have been no reports of hematopoietic, hepatic, or central nervous system toxicity. Mild paresthesias have been observed occasionally. In addition to hypokalemia and hypochloremia occurring in patients with cirrhosis of the liver, there has been a report of erythema developing in one patient. The condition cleared when the drug was stopped.

Case Reports

Case 1. A 66-year-old man, a school custodian, was admitted to the hospital on December 2, 1957, because of shortness of breath. Three months previously he had suffered a myocardial infarct and for the past two months he had become progressively shorter of

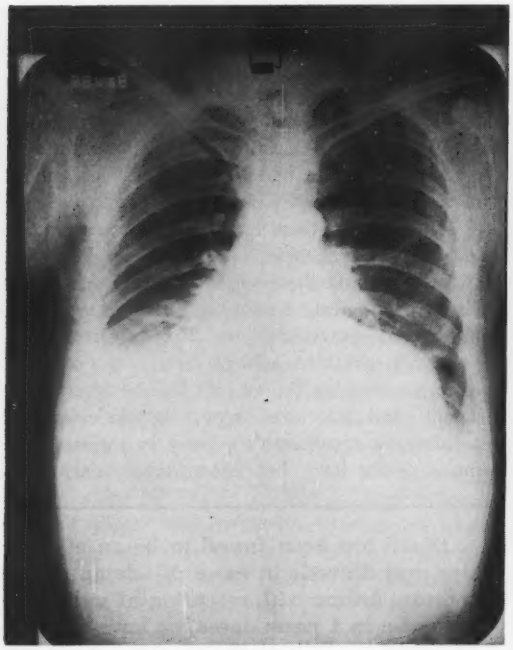


Figure 1-A. X-ray findings of Case 1, December 9, 1957.

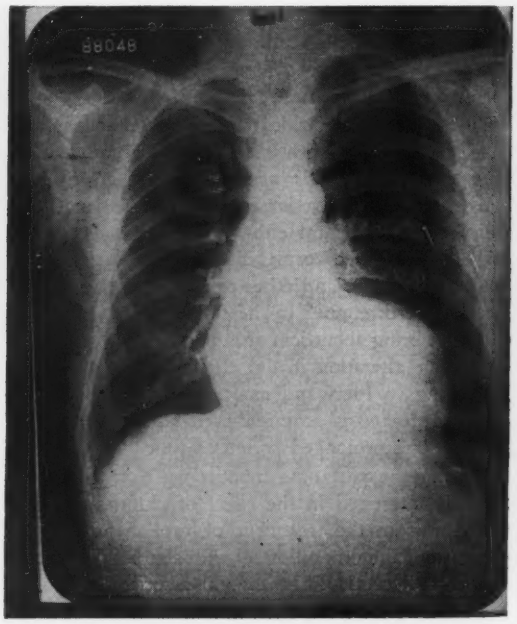


Figure 1-B. X-ray findings of Case 1 after 18 days of Diuril.

breath, although he had been digitalized and given mercurial diuretics. His blood pressure was 132/80, pulse 100, and there was bilateral pleural effusion. He was dyspneic; the skin was cold and clammy, and there was mild cyanosis. The heart was enlarged to the left. There was limited motion of the lungs with flatness of the bases and absent breath sounds. The liver was down four fingers. Peripheral edema was 2 plus.

The patient was placed on a moderately low sodium diet and given whole leaf digitalis and chlorothiazide. On admission the hemoglobin was 12, hematocrit 38, white blood cells 10,500, sedimentation rate 46, blood urea nitrogen 16.9, and the urine contained a trace of albumin. When he was dismissed on December 12, 1957, he had lost 20½ pounds, had no pedal edema, and had only a minimal pleural effusion. Chest x-rays are shown in Figures 1-A and 1-B.

Case 2. A 68-year-old housewife entered the hospital September 1, 1957, because of marked shortness of breath and almost continuous edema of the extremities for the preceding eight months, with no relief from diuretics of any type. She had had "inflammatory rheumatism" at the age of 18. Her blood pressure was 156/86, pulse 96 and irregular; there was marked dyspnea, dependent cyanosis, and 3 plus peripheral edema. Urine was normal. There were rales in the lung bases with impaired percussion note. The heart was enlarged to the left, irregular in rate and rhythm, and presystolic apical murmurs were heard. The gallbladder contained several non-opaque stones.

The patient was placed on a low sodium, low fat diet and given digoxin 0.25 mg. and Diuril. On dismissal, September 12, 1957, the patient had lost 21 pounds and had no peripheral edema. She has continued to do well. She remained edema-free on Diuril, although before admission, weekly mercurial diuretics had been required.

Case 3. A 55-year-old man, a Rock Island railroad track supervisor, was admitted to the hospital October 30, 1957, because of progressive shortness of breath with tachycardia. Just before admission he had developed orthopnea. His pulse was 120, blood pressure 120/80; there was 4 plus edema of the extremities; the heart was enlarged, and bilateral hilar congestion of the lungs was present.

He was placed on digitoxin and Diuril three days a week. During his stay, digitalis was discontinued for a time because of nausea. The hemoglobin was 10.5, hematocrit 32, white blood cells 7,450, the sedimentation rate 65; the urine was free of albumin. At the time of his dismissal, November 6, 1957, he had lost 25 pounds. Although he has a malignant lymphoma, he has done well insofar as his cardiac status is concerned. Chest x-rays are shown in Figures 2-A and 2-B.

Case 4. A 52-year-old housewife entered the hospital October 30, 1957, because of shortness of breath,

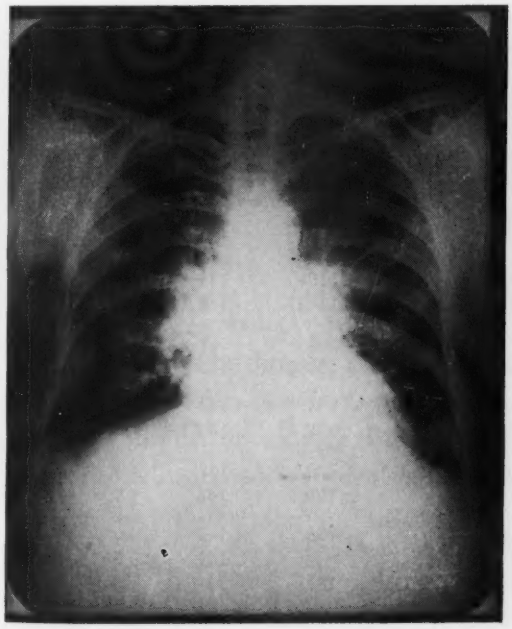


Figure 2-A. X-ray findings of Case 3, December 6, 1957.

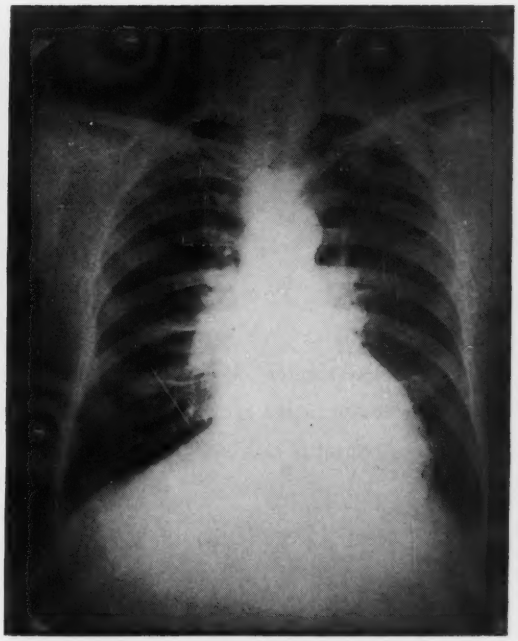


Figure 2-B. X-ray findings of Case 3 after 3 days of Diuril.

edema of the extremities, and a cough which had developed since having influenza and pneumonia six weeks prior to admission. Her blood pressure was 166/110, pulse 88, peripheral edema 2 plus; the heart was enlarged; the lung fields were clear, and the liver was down five fingers.

The patient was placed on digitalis, Diuril, and bedrest together with a low salt diet. The hemoglobin on admission was 12.5, hematocrit 41, white blood cells 5,850; the urine contained 2 plus albumin and casts. On dismissal, November 6, 1957, the patient was improved. There was no edema; she had lost 11 pounds, and the liver was not palpable.

Case 5. An 81-year-old retired blacksmith entered the hospital in a wheel chair on February 23, 1958, complaining of pain in his upper chest over a period of two years. This had been gradually getting worse the past four months. Exertion or excitement caused the pain to become more severe. He was short of breath and coughed some, raising clear sputum. His feet and legs had been badly swollen the past four weeks, and this swelling did not subside at night.

TABLE 1
EFFECT OF DIURIL ON PLASMA ELECTROLYTES

No. of Case	*Chart No.*	*Sex*	*Age*		*No. of days on Diuril*	*Weight in pounds*	*Sodium mEq./Liter*	*Potassium mEq./Liter*	*Chloride mEq./Liter*
1.	28807	M	66	Start of drug 12-4-57		147	145	4.8	104
				After therapy 2-25-58	70	126½	145	4.7	112
2.	27711	F	68	Start of drug 11-5-57		155	137	4.9	109
				After therapy 11-18-57	13	136	120	5.2	89
3.	28877	M	55	Start of drug 12-6-57		139	143	4.5	114
				After therapy 12-9-57			147	4.9	106
				12-16-57	10	123½			
4.	28432	F	52	Start of drug 10-30-57		170	153		113
				After therapy 11-6-57	6	159	152	5.2	96
5.	29844	M	81	Start of drug 2-23-58		164	143	5.6	109
				After therapy 3-5-58	10	134	148	5.1	107
6.	29079	M	57	Start of drug 12-30-57		180	140	5.0	107
				After therapy 1-11-58	12	150			
7.	29054	M	51	Start of drug 12-26-57		194	135	4.9	96
				After therapy 1-20-58	25	187½	142	4.7	105
8.	28199	F	70	Start of drug 10-10-57		118½	143	4.7	108
				After therapy 3-3-58	142	114	148	4.2	104
9.	29685	M	61	Start of drug 2-11-58		166	145	4.5	110
				After therapy 2-21-58	10	160½	146	3.9	104
10.	29690	M	68	Start of drug 2-10-58		186	140	5.4	107
				After therapy 3-1-58	19	177	140	4.0	100
11.	27958	F	54	Start of drug 10-28-57		220	152	4.3	96
				After therapy 11-4-57	7	190	142	3.9	100
12.	28897	M	60	Start of drug 11-18-57		183	142	4.6	107
				After therapy 12-9-57			143	3.6	104
				1-10-58	53	187½			
13.	28763	M	19	Start of drug 11-29-57		184½	147	4.0	107
				After therapy 2-15-58	47	185	141	4.2	109

His blood pressure was 140/90, pulse 104 and regular in force and rhythm; the vessels were sclerotic. The heart was found to be greatly enlarged to the left, and no murmurs were heard. There were crepitant rales heard in the bases of both lungs. The liver edge was palpable. There was no fluid wave. The feet and legs were edematous, the edema extending upward to the knees. The urine contained 1 plus albumin and many white blood cells. The blood count was normal. Sedimentation rate was 33 mm. per hour. Liver function tests were normal.

The patient was given Diuril 0.5 gm. twice daily and digoxin 0.25 mg. four times daily for three days, then 0.25 mg. once daily after breakfast, and he was placed on a low salt diet. His weight on admission was 164 pounds; on dismissal 134 pounds. He left the hospital free of edema, his lungs were clear, and the x-ray film of his chest showed the heart to be reduced in size.

Case 6. A 57-year-old man, a service station attendant, was admitted December 27, 1957, because of shortness of breath and swelling of his legs for the past six months. He had mild diabetes, was drowsy during the daytime, but slept poorly at night. He had gained 40 pounds in the preceding two weeks. His blood pressure was 145/90, pulse 72. The neck vessels pulsated, the heart was enlarged to the left, and extrasystoles were noted. Crepitant rales were heard in both lung bases, and an abdominal fluid wave was present. The liver edge was palpable. There was 4 plus edema of the legs. The expression was mask-like and he spoke in a monotone.

Initially, he was given digoxin, Diuril 1 gm. daily, triple K dr. 1 twice daily. A low salt diet was ordered. The urine contained 1 plus albumin on admission and none on dismissal. Blood urea nitrogen on January 9 was 13.1. He was dismissed January 11, 1958, still complaining of shortness of breath and aching extremities. His lungs were clear to percussion and auscultation; he had lost 30 pounds.

Table 1 shows the effect of the administration of 1 gram of Diuril per day on the electrolyte pattern in 13 patients with hypertension, cardiac failure, and other diseases causing fluid retention. Cases 1, 2, 3, 4, 5, 6, 8, 9, and 10 all had heart failure from various reasons; Case 7 had chronic nephritis; Cases 11 and 13 had severe hypertension; Case 12 had hypertension and a non-functioning pyelonephritic kidney. Patient 2 has now been on chlorothiazide six months. She continues to do well, is now able to do her housework, and apparently is well compensated.

Hertzler Clinic and Research Foundation
Halstead, Kansas

References

1. (a) Ford, R. B.; Rochelle, J. B. III; Handley, C. A.; Moyer, J. H., and Spurr, C. L.: The choice of a diuretic agent based on pharmacologic principles, J.A.M.A. 166:129, 1958. (b) Ford, R. B.; Moyer, J. H., and Spurr, C. L.: Clinical and laboratory observations on Diuril, Arch. Int. M. 100:582, 1957.

2. Freis, E. D.; Wanko, A.; Wilson, I. M., and Parrish, A. E.: Treatment of essential hypertension with Diuril, J.A.M.A. 166:137, 1958.

3. Fishman, A. P.: New York State J. Med. 58:10, May 15, 1958.

4. Laragh, J. H.; Heineman, H. O., and Demartini, F. E.: Effect of chlorothiazide on electrolyte transport in man, Ibid. 145, 1958.

5. Bayliss, R. I. S.; Marrack, D.; Pirkis, J.; Rees, J. R., and Zilva, J. F.: The use of chlorothiazide in the treatment of edema: a comparison with other diuretic agents, Ann. New York Academy of Science 71, Art. 4:442, 1958.

6. Beyer, K. H.: The mechanism of action of chlorothiazide, Ibid. 363, 1958.

He who looks with pride upon the history which his fathers have written by their heroic deeds, who accepts with gratitude the inheritance which they have bequeathed to him and who highly resolves to preserve this inheritance unimpaired and to pass it on to his descendants enlarged and enriched, is a true American, be his birthplace or his parentage what it may.

—Lyman Abbott

Bladder Action

A Study of Effects of Banthine and Urecholine

ELDON M. FILLMAN, M.D., ***Topeka***

The smooth muscle of the bladder is brought under voluntary control by means of the cortical regulatory tract, a part of the pyramidal system. As the bladder fills with urine, the detrusor of the bladder progressively relaxes until the volume reaches 300 to 500 milliliters. At this point, the bladder detrusor contracts. This is associated with a desire to urinate. The rise in intracystic pressure produces parasympathetically controlled relaxation of the internal and external sphincter, and micturition proceeds.

The proprioceptive sensations of filling and distension are mediated through the afferent fibers of the parasympathetic nerve, S 2, 3, 4. The stimulus is transmitted in the posterior columns of the spinal cord (fasiculus gracilis) to the sensory cortex. Stimuli of the cortical regulatory tract normally inhibit the motor limb of the sacral parasympathetic nerve from discharging until it is consciously released. The striated external sphincter innervated by the pudendal nerve (S 2, 3, 4) can be voluntarily closed but not opened.

Alteration of bladder function occurs with damage to the nervous system. The uninhibited neurogenic bladder results from interruption of the pyramidal tracts above the sacral segment. Sensation to filling is intact. The bladder functions without cortical regulatory control. Urination is frequent and precipitate, as in the infant. Nocturnal enuresis is common. This type of bladder may also be present in patients with such conditions as cerebral hemorrhage, brain tumor, cord tumor, and multiple sclerosis.

An automatic bladder is one devoid of sensation or pyramidal control. It functions under the control of the afferent and efferent limbs of the sacral parasympathetic arc. The bladder is usually spastic. Contractions are variable and may be ineffectual.

Destruction of the sacral segment of the spinal cord or cauda equina results in a denervated bladder. This bladder will have only spasmodic, weak contractions due to the inherent property of smooth muscle. Generally atonicity is present unless infection or other complications supervene to produce a hypertonic-type bladder. Neurogenic bladders in general are characterized by an imbalance between the action of the detrusor and the external sphincter.

Methantheline bromide, Banthine®, was selected as a typical anticholinergic drug. It blocks postganglionic neuromuscular junctions and autonomic ganglia. Pro-Banthine® has greater potency and causes fewer side reactions. The only side reaction encountered with a 30 milligram dose given subcutaneously was marked dryness of the mouth and pharynx.

Tracings made with the Lewis cystometer illustrate the effects of two drugs on bladder pressure, contractions, relaxation, and capacity.

Bethanechol, Urecholine®, was used as the drug with parasympathetic activity (cholinergic effect). It acts peripherally on neuro-effector sites in a manner similar to that of acetylcholine. Side reactions include flushing of the face, sweating, salivation, and slowing of the pulse. These reactions can be abolished by atropine. Urecholine should be given orally or subcutaneously, never intramuscularly or intravenously.

Tracings were made with the Lewis cystometer which measures intravesical pressure during continu-

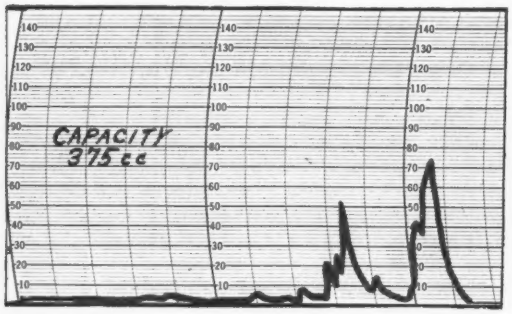


Figure 1-A

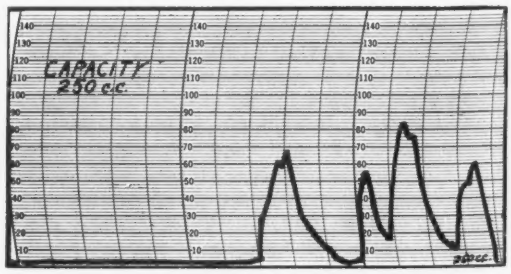


Figure 1-B

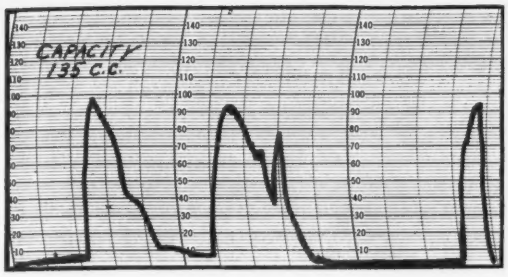


Figure 2-A

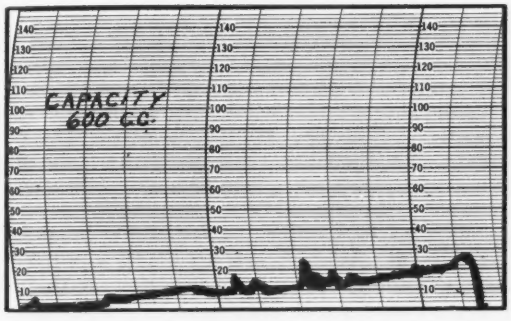


Figure 2-B

ous flow filling of the bladder through a catheter. About 20 cystometrograms were made. Typical examples will be presented:

Figure 1-A is a normal cystometrogram. Bladder pressure is low until the physiological capacity is reached. A bladder contraction then occurs, associated with a desire to urinate. If this desire is suppressed, as it was in this case, the detrusor relaxes again, but this is shortly followed by a stronger contraction and sense of urgency.

In Figure 1-B, five milligrams of Urecholine was given subcutaneously and the cystometrogram was taken ten minutes later. Note that the contractions are stronger and the bladder capacity less.

Figure 2-A is a tracing of a highly spastic reflex bladder, the result of transverse myelitis at T 6. The introduction of small volumes of water into the bladder produces strong, sustained detrusor contractions. The capacity was 135 milliliters. Note the change (Figure 2-B) 20 minutes after subcutaneous administration of 30 milligrams of Pro-Banthine. Bladder contractions are almost abolished. The capacity is increased to 600 milliliters.

Figure 3-A is the cystometrogram of a patient with multiple sclerosis and an uninhibited bladder of small capacity, 40 milliliters. After 30 milligrams of Pro-Banthine were administered subcutaneously, bladder contractions were weak and the capacity was more than doubled.

These cystometrograms illustrate the powerful effect on the urinary bladder of autonomic drugs used in therapeutic doses. Pro-Banthine has clinical importance in such conditions as spasm due to inlying catheter, postoperative prostatectomy, and interstitial cystitis. It is used to control enuresis in the neurogenic, uninhibited bladder.

Urecholine has its greatest usefulness in postoperative urinary retention not due to vesical neck obstruction. When given subcutaneously in 2.5 milligram to 10 milligram doses, it has a powerful action on the bladder. For the same effect orally, 30 to 40 milligrams must be used.

702 Mills Building
Topeka, Kansas

References

Francis, R. R.: The effect of carbachol and of Mecholyl on the urinary bladder, Journal of Urology 60:290, 1958.

Kraninin, P., and Ney, C.: Disturbances of urination after administration of certain newer drugs, New England Journal of Medicine 253:1111, 1955.

Lapides, J., and Hodgson, N. B.: Pharmacologic reactions of bladder, The Journal of Urology 79:707, 1958.

Lapides, J., and Dodson, A.: Preliminary Report. A study of the effects of Banthine on the human bladder, The Journal of Urology 69:96, 1953.

Sollmann, M.D.: A Manual of Pharmacology, Eighth Edition: W. B. Saunders Company, 1957.

Starr, I., and Ferguson, L. K.: B Methylcholine Urethane, American Journal of Medical Sciences 200:372, 1940.

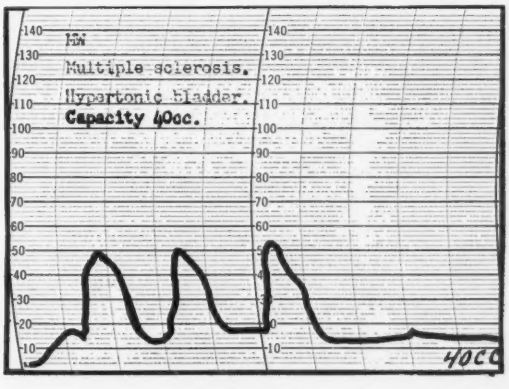


Figure 3-A

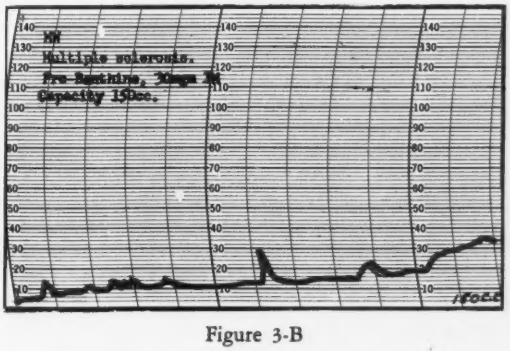


Figure 3-B

Low Back Pain

Emotional Factor as a Cause

PRESCOTT W. THOMPSON, M.D., ***Topeka***

Perhaps I can best illustrate the role of the "emotional factor" in low back pain by telling of a man I saw in consultation about a year after an industrial accident, and several months after the end of consequent litigation. He had fractured a lumbar vertebra and continued to have low back pain and weakness, even after a settlement was reached. Through talking about this man I believe I can say something about the "emotional factor" as it applies to many of our patients who complain of pain in the low back.

A 50-year-old railroad mechanic fell off a train. The train was traveling slowly but "it jerked." He had hung on trains which had jerked many times before and he had never fallen off, but this time he fractured a lumbar vertebra, and of course his back hurt. But what caused the pain? It seems obvious that some of it was caused by the tissue injuries, but, as we found out later, it was much more complicated than that.

At the time of the accident he had been depressed for some time. His wife had died some months earlier. He sometimes reflected that he did not care what happened to him, that he might be better off dead. He was in this frame of mind when he fell off the train. He did not do it "on purpose"; it was truly an "accident." But it occurred under the circumstances just described.

Curiously enough, the patient felt better immediately after the accident than before. I believe there were two reasons for this. First, he was depressed, and the depressed person sometimes feels better when external events are a little rough. A second reason why the accident actually produced some relief of pain was that physical pain and even the discomfort of a cast were more endurable to this man than the psychological pain which he had experienced prior to the accident. Anyone who has been deeply depressed knows that physical pain is more tolerable than depression, or guilt, or anxiety, or other emotional pain. Either way, it hurts!

The pain in his low back thus served both as a signal of a local injury and as a substitute for a preexisting psychological pain. Obviously, the fact that the pain was now localized in the low back had to do with the fact that he did have a back injury. Furthermore, having a pain in the back had the added advantage of being compensable. He later sued the railroad and collected a sizable sum. The back injury was assumed to have caused both his immediate pain and the subsequent disability.

Why should this man continue for many months to be disabled? He kept complaining of low back pain and weakness after excellent orthopedic care with complete healing of the fracture in good position, and with months of appropriate exercises and physiotherapy. The injury should have punished him enough to relieve his depression, and he should have recovered.

Factors of guilt, resentment, self-punishment, dependency, and self-reproach often contribute to back pain and its perpetuation. The case reported here illustrates this concept.

To explain what ends his continued pain served, and thus why it persisted in spite of tissue healing, let me stress that this patient was a hard-working man who had been dependent upon his wife, whom he had recently lost. Note that I carefully point out that this man was a hard worker. I want to make it clear that dependency and hard work often go together. As a matter of fact, working hard and being financially independent helped this man hide from himself the fact that he was emotionally so dependent. I believe that this combination is characteristic of people with back pain.

At any rate, this man had strong feelings about his wife's death—resentment that she had left him, mingled with grief. A self-respecting man like this one would naturally feel guilty about resenting the dying of his wife! He would also be ashamed of acting like a baby—that is, feeling sorry for himself that his wife was no longer there to take care of him.

So far I have noted the factors of guilt, resentment, self-punishment, the substitution of preferred physical pain for psychological pain, dependency, self-reproach, and covering up dependency by hard work. I think we will find all of these things in many patients who complain of back pain.

Contribution to a panel discussion on low back pain presented at the Golden Belt Medical Society meeting, Junction City, April 10, 1958. Other participants: W. David Francisco, M.D., Moderator; Joseph Gendel, M.D.; Paul L. Nelson, M.D.; Paul Schraer, M.D.; and Robert Woods, M.D.

The further course of this man's disability, and some of the psychological processes involved, can be summarized as follows: He demanded from the company through continued illness and litigation what he wanted from his wife, but of course could no longer get; that is, gratification of his wish to be taken care of. He told through the body language of his disability and weakness how it made him feel to be abandoned by his motherly wife he needed so much. At the same time, he punished himself for trying to get so much by his pain and unhappiness. He justified his complaint against his wife, and his demandingness, by a continuing physical symptom. This, of course, is another good reason for developing physical pain in preference to psychological pain. We are more likely to get what we want if we "hurt" than if we just feel bad. In our society, if we feel bad we are supposed to pull ourselves together, but if we can develop a headache we can more easily justify taking some aspirin or a day off.

These mechanisms were not conscious efforts to get or to deceive, any more than the patient's original accident was a conscious effort to hurt himself. His back pain and weakness were real, and he felt perfectly justified in his demand for a sizable cash settlement since his livelihood did in fact depend upon his back being in good shape. He would have strenuously denied in all honesty that he wanted from the company more than he deserved, and it would have made no sense to him to say that he was resentful toward his deceased wife, and that these feelings had to do with the perpetuation of his symptoms.

Such feelings and reactions can be uncovered gradually if the doctor is aware that they do contribute to back pain or to its perpetuation, and if he takes time to listen to what the patient is saying about himself. At the time that the patient is talking about his feelings, he will also often be listening to what he is saying. It is only in this way that he can be helped to see how his feelings contribute to his pain. This is what we attempt to do in a psychiatric consultation, or in treatment. In this case, the patient did later understand what he was doing, and his insight made it possible for him to get rid of his symptoms and to get back to a happier, more comfortable life and job.

It is not always possible to accomplish this, and the family physician is often in a more strategic position to do this than is the psychiatrist, particularly because the earlier a man begins to talk about his life situation and his feelings, the less likely he is to continue to use his aches and pains for unconscious purposes. And his gratitude for the doctor's interest makes him more likely to talk. I realize it takes time and that it is hard to do in a two- or three-bed ward, but it takes less time than one may think, and much of it can be done in the course of taking the usual history and doing a complete physical examination.

Let me give a brief example of how not to do it. Then I will suggest how to do it better. The doctor is talking to a patient who has just been admitted to the hospital with back pain.

Doctor: Who are you angry at?

Patient: (Already defensive) Are you kiddin', Doc?

Doctor: No. You must have been angry, or something. A psychiatrist said so.

Patient: Those head-shrinkers are nuts. Besides, I ain't mad at anybody.

Doctor: (Flustered but regaining his composure) Well, then, what caused the ache in your back?

Patient: I told you, Doc. I fell off the ladder and I couldn't get off the ground, and now it hurts every time I move.

(At this point, the doctor uses a better interviewing technique.)

Doctor: Can you tell me how you happened to fall?

Patient: I have never fallen before. Some stupe didn't set the ladder right.

Doctor: (Noting hostility toward fellow employee) Sounds like a pretty careless guy.

Patient: I should have checked it myself. I guess I wasn't feeling right that day.

Doctor: Oh?

Patient: One of my kids was sick and my wife said she wanted to go visit her mother. I didn't think she ought to go until the kid was okay.

Doctor: What happened?

Patient: We had a fight and she said she was going anyway. I guess I got pretty mad.

And so on. You will note that the doctor doesn't tell the patient how he feels, but helps him to talk about it. When his wife comes to visit, he will feel better about her if he has talked about his anger. Also, being a little less angry, and having told the doctor about what actually happened, he is less likely to lie in bed the next few days getting madder and madder at the "stupe" who didn't set the ladder right, and building up a good compensation case. His course in the hospital will be smoother, and the "emotional factor" will be less important.

The Menninger Clinic
3617 West Sixth Street
Topeka, Kansas

References

Flanders, Dunbar: Emotions and Bodily Changes, 4th Edition, Columbia University Press, 1954.

Holmes, Thomas H., and Wolff, Harold G.: Life Situations, Emotions, and Backache, pages 750-772, Life Stress and Bodily Disease, Williams and Wilkins Company, 1950.

Mental Deficiency

A Proposal for Care and Prevention

CHARLES M. POSER, M.D., ***and***
FRANKLIN R. MILLER, M.D., ***Kansas City***

The state of Kansas can be justly proud of its internationally famous mental health program. Its pioneer efforts in the care and rehabilitation of the mentally ill have also been applied to the emotional problems of childhood and adolescence, and great strides are being made in child guidance and juvenile mental health programs. The psychiatric approach has also been extended to the care, training, and rehabilitation of the mentally defective child who has become an inmate of one of the state institutions.

This emphasis upon the psychiatric aspects of mental deficiency has, however, tended to obscure the fact that in the overwhelming majority of cases, the underlying defect is in an anatomical, biochemical, or physiological disturbance of the central nervous system. In other words, a functional approach is being applied to the solution of an organic problem. On the one hand, these efforts on the part of psychiatrists have not been wholly fruitless, since mental deficiency brings along with it many psychiatric and social difficulties. On the other hand, pediatricians and neurologists have failed to devote sufficient time and attention to these problems.

Now that neurology is at last emerging from its purely descriptive origins and entering a new dynamic and therapeutic era, problems of mental deficiency are again claiming the attention of the neurologist and the neurosurgeon. During the last few years the investigations of geneticists, biochemists, clinicians, neuropathologists, endocrinologists, and nutrition experts have begun to discover some of the etiological factors underlying mental deficiency. With these discoveries have come the knowledge that, at least in some instances, mental deficiency is a preventable disease.

At present, the state of Kansas maintains two hospitals and training centers for mentally retarded children. The institution at Parsons admits patients between the ages of 6 and 22 years who are considered trainable, while the hospital at Winfield is devoted to those children whose handicap is so great that no serious hope can be entertained of returning them to society. It is noteworthy that both these institutions are located quite far from the state's own center for medical education and research, the University of Kansas Medical Center.

Admission procedure for patients to enter either of these two hospitals is initiated by the family physician through the local county department of welfare. The application is then reviewed by a pediatrician, a psychologist, and a social worker. At no time is the child, before hospitalization, examined by a medical person who specializes in the study of, or who has experience in, the various forms of illness that result in severe mental deficiency leading to institutionalization. At no time is he subjected to a battery of pertinent laboratory tests.

The care, training, and rehabilitation of the mentally defective child will always be important functions of state institutions. The obligation to prevent mental deficiency, when possible, should also be stressed. A five-point program to achieve this objective is outlined.

Examination of the records of patients at the Winfield State Hospital and Training Center reveals that certain patients were admitted for purely social reasons. Even though there is no doubt that in some cases social reasons may indeed be important, experience has made abundantly clear that many retarded children will thrive and achieve some form of adjustment when provided with normal parental care and affection but will hopelessly deteriorate when placed in even the best run institutions.

In some instances, children have been taken into the institution after the parents had refused corrective surgical measures which might have prevented development or aggravation of the mental deficiency. Too many times incorrect diagnosis by honest but insufficiently trained physicians has led to institutionalization of children whose lives might have been entirely different had the proper diagnosis been made early enough and corrective measures, medical, nutritional, or surgical, been taken before deterioration of the brain became irreversible.

In another area of disability the state of Kansas, through its Crippled Children's Commission, provides

From the Section of Experimental Neurology, University of Kansas Medical Center, Kansas City, and the Winfield State Hospital and Training Center, Winfield.

care almost exclusively for children who are not institutionalized but who have a motor disability in some manner related to cerebral palsy. The fact that the majority of children so handicapped suffer from various degrees of mental deficiency has hardly been recognized. By statute, only two types of physicians are recognized by the commission as capable of caring for these patients, orthopedists and plastic surgeons.

Some progress has been made in establishing a better mechanism for evaluating the abilities of children who are put in the care of this commission. Clinics at the University of Kansas Medical Center employ a team consisting of orthopedic surgeons, a neurologist, a pediatrician, a speech therapist, psychologists, a psychiatrist, an ophthalmologist, a dentist, and an occupational therapist. The child undergoes a battery of physical examinations and laboratory and psychological tests. Further diagnostic procedures can be undertaken, but, regardless of the nature of the underlying condition, these are still under the direction of the orthopedic or plastic surgeon.

The urgency of such thorough investigation has been emphasized by the fact that research workers have already pointed out possible means of eliminating some forms of mental deficiency. It is now known that what has been called "epileptic deterioration" results not necessarily from the disease itself, but rather from the repeated episodes of anoxia to the brain with each convulsive seizure, from the repeated episodes of cerebral trauma which may occur. This is especially true when the child's delicate brain is subjected to these repeated insults. Present neurological therapy can provide full control for as high as 75 per cent of epileptics. Early initiation of anti-convulsant therapy will result in prevention of this form of mental deterioration.

Phenylketonuria, or phenylpyruvic oligophrenia, is an inborn error of metabolism characterized by failure to oxidize phenylalanine to tyrosine and the excretion of abnormally large amounts of phenylpyruvic acid. This disease results in severe mental deterioration. Ten such patients are now inmates of the Winfield State Hospital and Training Center. It has been shown recently that if the disease is discovered early enough (and it should be added that the diagnosis is extremely easy to make), and such children are placed on a phenylalanine low-diet, there is a good possibility that they will develop normally.

Certain forms of hydrocephalus and of premature closure of the cranial sutures can be corrected if neurosurgical procedures are done early enough in life. Various severely crippling diseases of the basal ganglia with abnormal movements can be remedied by new neurosurgical techniques and such patients can be saved from institutionalization. Swift recognition and adequate treatment of cretinism and other endocrinopathies, as well as of congenital syphilis, should have eradicated those diseases, yet their victims are still to be found in our state institutions. Scores of patients at the Winfield State Hospital and Training Center have been classified as "simple or idiopathic" mental defectives. Work in progress at some of the leading medical centers in this country has demonstrated that in some of those cases a biochemical abnormality lies at fault.

Lack of personnel, money, and laboratory facilities has severely hampered any effort toward undertaking historical and genetic investigation of the patients' background. Research of this type might provide clues as valuable as were those found by Gregg in rubella during prenatal life and by Hicks in exposure to radiation. The influence of nutritional factors and the so-called benign exanthemata of childhood has been neglected in favor of elaborate social and mental histories of the mental defective's parents and grandparents.

There is no question that the care, training, and rehabilitation of the mentally defective child will always be important functions of the state institutions. To these functions must now be added that of preventing mental deficiency. Our state institutions should become research institutions as well as centers for care and training.

A suggested program of steps to be taken toward this goal follows:

1. Familiarize family physicians with the different forms of mental deficiency, the important etiological factors, and the methods available at present for prevention or correction of mental deficiency. An educational program of this nature is already in effect at the University of Kansas Medical Center. Undergraduate teaching in neurology and neurosurgery and state hospital preceptorships should inculcate these facts in medical students. Educational efforts directed at physicians in practice take the form of postgraduate study in neurology and neurosurgery and in circuit courses. A greater effort is needed in this latter endeavor.

2. Establish a new procedure for admission of the mentally defective child to a state institution. This preferably should be done through a diagnostic center located where it can be adequately staffed by well-trained pediatricians, neurologists, neurosurgeons, orthopedic surgeons, psychiatrists, and other personnel concerned with the problem of mental deficiency. Nearness to centralized medical facilities would in some measure alleviate the difficulty of obtaining well trained personnel. No child should be admitted to an institution for mental defectives unless such admission is recommended after thorough examination and study at the diagnostic center. This in itself should help decrease the number of new admissions to

the state institutions. The diagnostic center would recommend home care if this were deemed most beneficial to the patient and his family. Corrective surgical or medical measures should be available at the diagnostic center, or, if preferred, could be performed by the patient's own physician.

3. Extend care provided by the Kansas Crippled Children's Commission to include the mentally deficient child so that financial help would be available when home care is deemed advisable. This type of help should cover medications, special diet and appliances, speech and physiotherapy, and psychiatric help either in the home, in out-patient clinics, or by the family physician.

4. Provide funds for establishing a research program devoted to study of various aspects of mental deficiency. Such a program could be conducted either at the University of Kansas Medical Center or at one of the state institutions. All patients admitted to the state institutions should be available for such investigations in the same manner as are patients in the university hospitals. In addition, investigation of pathological material remains the single most important source of information. Postmortem examination of patients who die in institutions for the mentally defective should be carried out as frequently as possible by informing the guardian of the great value of this procedure.

A neuropathological laboratory and a biochemical laboratory with the necessary equipment for electrophoresis, paper chromatography, biological assays, and other techniques must be the nucleus of such a research program. Work in progress at other medical centers has clearly indicated that detailed investigation of protein, lipid, carbohydrate, and trace metal metabolism as well as of endocrine and nutritional factors will eventually provide clues to many forms of mental deficiency. These biochemical and neuropathological studies have already solved problems that had baffled medicine for many years.

5. Reappraise the existing training and rehabilitation program for the mentally defective child. It is an inescapable but unfortunately rarely admitted fact that there are children with such severe degrees of mental deficiency that no expenditure of time, money, or effort will ever help. A great many children undergo extensive physiotherapy and corrective orthopedic procedures but will never be able to speak or tend to their bodily needs. Every man-hour and every dollar spent on such children may be better spent on those with greater over-all potential. Certain cases must be recognized as purely custodial in order to devote more intensive effort to more promising ones, although measures to make custodial patients as self-sufficient as possible should be encouraged.

Medical progress has resulted in a continuing decline in infant mortality and prolongation of adult life. The rate of discharges from state institutions is well below the number of new admissions, and this disparity will inevitably continue to grow as more defective children are kept alive and as inmates of state institutions survive for longer and longer lives. From a purely economic point of view, prevention of mental deficiency can be cheaper than care for increasing numbers of such patients. From the human standpoint, the avoidance of the heartbreak and tragedy of mental deficiency is of incalculable benefit to all concerned, including the state.

Section of Experimental Neurology
University of Kansas Medical Center
39th and Rainbow
Kansas City 12, Kansas

We listen too much to the telephone and we listen too little to nature. The wind is one of my sounds. A lonely sound, perhaps, but soothing. Everybody should have his personal sounds to listen for—sounds that will make him exhilarated and alive, or quiet and calm . . . as a matter of fact, one of the greatest sounds of them all—and to me it is a sound—is utter, complete, silence.

—*André Kostelanetz*

Maternal Death Study—Case History

The patient, a 20-year-old primipara of the lower income group, died in a general hospital following the delivery of a 7-pound, 12-ounce liveborn infant. Certificate diagnosis was "cerebral vascular accident." There was no autopsy or staff discussion.

Prenatal care was initiated in the second month of pregnancy and was apparently adequate in quantity and quality, there being no abnormalities recorded prior to the onset of labor which was spontaneous at term. When the patient was admitted to the hospital after one and one half hours of labor, the cervix was dilated five centimeters and no abnormalities were noted except a blood pressure of 170/100, some headache, and a trace of edema. Progress was rapid, and she was taken to the delivery room two and a half hours after admission for the administration of nitrous oxide inhalations during the second stage. At this time she experienced a convulsive seizure lasting ten minutes. Three minims of Pitocin were administered, apparently to hasten delivery of the infant, and 15 minutes later, another ten-minute convulsion occurred and the baby was delivered in good condition. Catheterized urine at delivery showed albumin, one plus.

The patient did not regain consciousness after the second convulsion. A total of nine convulsions were recorded in the 30 hours until death, the patient convulsing continuously during the final two and a half hours. The physician left the hospital two and a half hours after delivery and apparently was not notified that the convulsions were continuing until noon the next day. During this time, medication consisted of sodium phenobarbital, three grains intramuscularly. A spinal tap was performed with normal spinal fluid being found. No eye ground examination or paralyses were noted. Blood pressure remained about 170/80, dropped to 50/40 for a time, then returned to 130/100 until the terminal drop. Temperature rose to 110 degrees rectally and was brought down with ice packs. There were few chart entries, but medications during this time included Sodium Seconal, Sodium Phenobarbital, Sodium Amytal, Levophed, Cortex, Adrenalin, and an aspirin and starch enema. Urine output was scanty.

Consultation with a surgeon supported the physician's belief that he was dealing with a cerebral hemorrhage. He did not believe eclampsia was involved. An autopsy was not requested because it would have required bringing a pathologist from a nearby large city at considerable expense.

COMMITTEE OPINION: The committee disagreed with the attending physician, believing this to be fulminating eclampsia with subsequent cerebrovascular accident. The cardinal symptoms of toxemia were present when the patient was admitted, and it was felt that the final result might have been altered had the situation been recognized and vigorously treated. The committee considers this an unfortunate but excellent example of the rapidity with which toxemia may become established and of its potential seriousness regardless of its mild initial appearance.

CLASSIFICATION: Obstetric death; preventable.

One of a series of case reports prepared by the Committee on Maternal Welfare to illustrate the type of study made in each instance of maternal death in Kansas.

PRESIDENT'S PAGE

DEAR DOCTOR:

In accordance with instructions from the House of Delegates, a new Medicare contract has been signed. During negotiations in Washington two subjects of principal interest emerged which we believe worthy of note.

The Congress will apparently curtail this program in the belief that care from private sources is more expensive than when rendered through government facilities. The officials with whom we visited appear to understand and are sympathetic with the philosophy of private practice.

However, the cost of the program has increased to the point where Congress is demanding economy of operation.

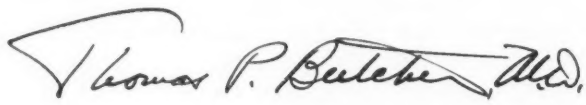
With the above fully understood, we still succeeded in obtaining approval in Kansas for what may be considered a contract without a fee schedule. They will pay every physician the figure he would normally charge a private patient in the $4,500 income level. (The income for the average Medicare patient is considerably below this figure.)

There is a maximum above which, we agreed, the government will not pay except upon individual consideration, but this is so high that, we are convinced, it should present few problems. Thus, for all practical purposes, while there is a ceiling to protect the government, it may be considered that in Kansas, Medicare is now operating without a fee schedule.

This appears to be a victory. We contended that a controlled fee is an infringement upon free enterprise and a threat toward socialism. However, it carries with it the moral obligation of every physician who renders service under this program to charge only his normal fee and to effect all reasonable economy just as he would for any private patient.

Failure of our integrity will ultimately destroy the private practice of medicine. It is just that simple. It portends that much.

Sincerely,



President

EDITORIAL COMMENT

Experience

We are prone to underestimate public intelligence and overestimate public experience. In that phrase, borrowed from a speech, may be uncovered some of the mysteries of public opinion. Here may be found an answer to some of the criticism against medicine and it may provide a solution.

The wrong public opinion isn't necessarily the result of a perverse attitude, and it is not because the public generally cannot comprehend the story. The public simply has not been told in a manner that is in keeping with its experience.

The average American child is quite sophisticated upon the television fare of the day. His concept of the code of justice in the old west, by way of example, might be quite beyond the comprehension of the equally intelligent youngster who lives in Copenhagen. It would require a considerable explanation of fundamentals before any productive discussion on that subject might take place.

Perhaps a better illustration is to discuss aerodynamics with a person who has never seen aircraft except as it flew over. Or, better yet, talk medicine to the housewife whose education has never included any subject in that field. Add to this the public confusion that arises from the normal variation of opinion among professional persons and the picture is complete.

Organized medicine says private enterprise is preferable to socalized care, but medicine fails to justify its stand. The public, lacking experience, explores for a better life, and finding an occasional complaint about the present system, opens its mind to anything that portends improvement.

When the profession opposes the extension of socialist practices into the field of health, the public understandably attributes such attitudes to a desire for preserving a system currently favorable to the profession. As the profession speaks louder, the public is inclined to believe this more firmly.

It appears reasonable, therefore, to analyze the public experience before launching upon a program of instruction. The success of such effort depends upon an understanding of this principle. Failures of the past might be explained in the same way.

How do you explain calculus to the man whose only need for mathematics is to count the cattle in his pasture? What do you say to the congenitally blind that will convey a meaning to color? These situations do not involve the problem of intelligence. They are questions of experience. They are not insurmountable obstacles. They are difficult but not impossible.

Medicine has a similar problem aggravated only by the fact that the lack of experience is better disguised and not so immediately recognized. The doctor who orders a pill to be taken three times daily is demanding participation by a layman in an action he fails to understand. He will follow in blind faith but upon the personal reflection of his own mind what constructive answer will this experience call forth?

So it is not a question of intelligence but a problem of experience that is involved, and in dealing with the public the problem is increasingly acute as the subject becomes more complex.

The solution is easy. There are two alternatives and perhaps a little of each is to be desired. The public might be educated to narrow the chasm between the physician and his patient. He will then understand what the doctor means and can comply with his requests intelligently. He will then also be in a better position to evaluate the social, economic, and the legal problems of health. But such instruction requires time and patience and a certain amount of genius for expression.

The other is to offer a service of such value and in such abundance that the public will not look for any other benefit. This too requires time and patience and a certain amount of genius, but it can be accomplished because it is not a question of intelligence but of experience that is involved. The one would be impossible; the other presents a challenge.

Hospital Usage

There has recently been organized in Kansas a committee called the Joint Study Committee on Hospital and Medical Economics. Equally represented are the Kansas Medical Society, the Kansas Hospital Association, and the Blue Cross and Blue Shield boards of directors.

Although this group will explore many fields of hospital and medical economics, its first endeavor will be to study hospital usage in Kansas. The question of usage has been cause for concern for some time and was criticized recently by Francis R. Smith, insurance commissioner of Pennsylvania, who charged that patients in his state have been hospitalized unnecessarily and for periods of time in excess of need. The objective of this committee study is to determine whether this condition exists in Kansas.

The group recommended that this study be made in Kansas with all phases of the project subject to approval by the Relations Committee of the Kansas Medical Society. After the approval is obtained, each member of the Relations Committee will contact his district committee and appoint one doctor from each hospital in his area to take the lead in recommending

to his medical staff that an evaluation committee be established.

Hospital administrators will be asked to provide case records and make every arrangement possible to speed up the work of these evaluation committees so that the study can be completed at an early date. It is suggested that 30 to 50 cases be selected from some previous month's experience and that they be taken on a consecutive basis with a certain percentage of surgical, obstetrical, and medical cases.

An evaluation form will be prepared and will lend itself to statistical handling through I.B.M. machines. Among other items it will ask for the following information.

1. Was this admission as an in-patient justified in view of the condition of the patient? Could the patient as easily have been diagnosed or treated outside the hospital?

2. Was the length of stay reasonable in view of the condition of the patient? Evaluate the number of days in excess of need, if any.

3. Estimate the drugs, other treatments, and diagnostic studies in excess of need for this case, if any.

4. Does the patient have insurance? Was he a private care patient or a county welfare patient?

There will also be a space where the hospital will indicate the total case expense and estimate various items of cost of any excess of use, as determined by the medical committee.

Upon completion of the evaluation forms, the hospital administrator will be asked to assemble the forms and send them to the Kansas Hospital Association for state-wide summary. The committee hopes to have reviewed some 7,500 cases involving one-third of the Kansas physicians for presentation to the organizations involved.

Population Trends

Well over 70,000 more of this year's crop of babies will be knocking at the doors of the nation's high schools than would be doing so under the health conditions of only ten years ago. Some 700,000 more will reach the high schools than would under the conditions prevailing in 1900.

These estimates are given by Dr. Louis I. Dublin, noted health statistician and consultant on health and welfare for the Institute of Life Insurance, in analyzing the long-sustained progress in child health.

"Few realize how great the advances have been in recent years in safeguarding the lives of our children," Dr. Dublin said. "Today about 97 per cent of the more than 4,000,000 children born annually will be alive to celebrate their 15th birthdays.

"In 1900 only 79 per cent would have survived 15 years. And the gains continue to be made, demonstrated by the one-third drop in child death rates in the last ten years for which figures are available.

At the same time that this illustrates advances in medicine and public health, it points up the problems of educators who must make provision for this increasing school population, the impact of the future increase in new family formation on our people and on our economy, according to the Institute consultant.

The largest single factor in the child-health gains has been the saving of infant lives in the first year, Dr. Dublin said. First-year deaths have always accounted for the greater part of the total deaths under age 15. In the early years of this century, half of all child deaths were in the first year; today nearly three-fourths are in the first year. The difference is that in 1900, every sixth infant died in the first year of life and today only one in 33 will die in the first year. Even ten years ago, the first-year death rate was half again as large as today.

Significant gains have been made in all the years of childhood up to the 15th year. First-year death rates have dropped over 80 per cent since 1900—36 per cent in the past ten years. Death rates among the 1-4 year-olds have dropped 94 per cent since 1900—39 per cent in the past ten years. Among 5-14 year-olds, the decline has been 87 per cent since 1900—38 per cent in ten years.

"As a result of the many advances in medicine and in public health," Dr. Dublin added, "our children not only survive to adulthood but enjoy increasingly good health. With greater co-operation of parents, teachers, physicians, and health officers, health impairments should become less important with the passage of time. We can congratulate ourselves on what has transpired in the last 50 years in the life and health of our children—indeed, in the last 10 years. It is largely through these gains that the average length of life at birth has increased by more than 20 years in the last half century. That is why the expectation of life today has reached the unprecedented figure of 70 years."

Films of A.M.A. Meeting

Filmed highlights of the A.M.A.'s 107th annual meeting—presented by the American Medical Association in cooperation with Merck, Sharp & Dohme—will be available after September 1 for showing to medical meetings. Entitled "San Francisco—1958," the 40-minute black and white films taken from kinescopes of five daily television programs may be secured either from the A.M.A. Film Library or Merck, Sharp & Dohme, Philadelphia 1, Pennsylvania. The films will feature interviews with speakers on the convention program.

Uniform Reporting

One of the most important projects to which pediatricians in Kansas should give attention is a more uniform method of reporting results in the care of our newborns in hospitals. The fact that we have had some variation in reporting, particularly of the smaller infant of 1,000 grams and under, does not lend itself to accurate analyses of the results of newborn care.

If a uniform reporting method is adopted, it might necessitate reporting infants whose weights are as low as 500 grams, whether live or stillborn. Infants who expire outside the hospital should be charged against the hospital in which they were born, since this method might improve over-all care in many instances. Likewise a uniform listing of causes of death should be adopted in all hospitals of the state. The listing might follow Potter's classification, or a similar type which should be prepared by pediatricians or by the Kansas State Board of Health.

Another point which comes to mind is the necessity of adding to the report the time following birth at which death occurs. Certainly most of our efforts should be directed toward those who die within the first seven days after delivery, while those who expire in the period of 7 to 28 days of life should be studied in a different manner. In the latter group public health services can probably shed a great deal of light on the effects of home situations and economic factors pertaining to our death rates.

After the recent meeting on perinatal mortality, sponsored by the American Medical Association in Chicago, we should go along with recommendations formulated in this regard. In the meantime we should lend every effort to bring about uniform reporting throughout the state.

Prepared by the Child Welfare Committee of the Kansas Medical Society

THE MONTH IN WASHINGTON

Editor's Note. The following summary of Washington news was prepared by the Washington office of the A.M.A. for distribution to state and regional medical journals.

For the first time since the idea was proposed more than seven years ago by President Truman and Oscar Ewing, legislation to tack a hospital and medical service program onto social security has received a thorough airing before a Congressional committee.

For 11 days the House Ways and Means Committee listened to testimony on this and other suggested changes in the law. The hospitalization plan—now identified as the Forand bill, for its sponsor, Rep. Aime J. Forand (D., R. I.)—was by far the most controversial issue. It came up repeatedly and each time was the signal for either sharp questions or praise from Mr. Forand, depending on what the particular witness thought about the bill.

At the end of the hearings, it appeared that a majority of the committee was not inclined to press for enactment of the Forand bill, although there remained the possibility of sentiment change. At this writing, the prospect is that a bill may be enacted to raise both social security and old-age assistance payments, with a $600 increase in the amount of taxable salary or self-employment income to meet the extra OASI cost; public assistance payments come out of general revenue.

What did the Forand hearings produce?

For one thing, the proponents and opponents lined up in columns to be identified. The one important exception was the American Hospital Association. The A.H.A specifically opposed the Forand bill "at this time," but left itself room for maneuvering.

The hospital witnesses, Ray Amberg, president-elect of the A.H.A., and Dr. James P. Dixon, chairman of its committee to study health needs of the aged, said their conclusion was that federal help of some sort was needed to finance the health care of the aged, and that the social security approach might be the ultimate decision.

However, for the present the hospital spokesmen proposed that the Ways and Means Committee set up a special advisory committee—health personnel and others—to bring together all information on the health problems of the aged, study the data, and make recommendations to the committee before January 1, 1960.

American Medical Association led the parade of opponents of the Forand bill, and its witnesses, Dr. Leonard Larson, a trustee, and Dr. Frank Krusen of the Mayo Clinic, were subjected to close but not unfriendly questioning by Mr. Forand.

At one point Dr. Larson, the new chairman of the A.M.A. Board of Trustees, told Mr. Forand: "As chairman, I shall devote all my energies to solving this problem and other problems of medical care plans in general. This is my primary interest. I rise or fall on what happens in this field."

Lined up with the A.M.A. in opposing the Forand plan (in addition to the A.H.A.) are the American Dental Association, Blue Shield, the insurance industry in general, the U. S. Chamber of Commerce, and a number of other business and professional groups.

The AFL-CIO appears to be the backbone of forces working for the Forand bill. Labor's spokesmen, however, have the backing of several welfare organizations (plus the Illinois and Massachusetts welfare directors), the American Nurses Association, and the Physicians Forum, among others. The latter group also informed the committee that it favors compulsory social security coverage for physicians.

Notes

A highlight of a testimonial luncheon for Surgeon General Burney was the first public appearance of Dr. Gunnar Gundersen as new A.M.A. president. Dr. Gundersen praised Dr. Burney as a public health officer and as a government official who did not lose contact with the private medical community. The affair was in recognition of Dr. Burney's election as president of the World Health Assembly.

For the time being, neither doctors nor hospitals will have the exclusive radio frequencies they are attempting to obtain. They were temporarily turned down by the Federal Communications Commission in one category, but will continue their efforts to obtain the frequencies for emergency as well as day-to-day communications.

It was late in the session before Congress indicated it would continue the Hill-Burton program; legislation virtually certain of enactment would extend the operation for three years, and authorize long-term loans to non-profit sponsors who for religious or other reasons do not want federal grants.

While avoiding "campaigning against smoking," the U. S. Public Health Service is going to pass on to the public all the information it has on the subject. Its most recent effort in this direction was release of a report, based on studies of 200,000 veterans, that showed a much higher death rate for "cigarette only" smokers.

PHYSICIANS' ACTIVITIES

Dr. David G. Shivel, who recently completed general practice residency at the University of Kansas Medical Center, is now practicing in Great Bend in association with **Dr. M. F. Russell** and **Dr. Homer B. Russell.**

Newly elected to associate membership in the American Association for Thoracic Surgery is **Dr. A. M. Tocker,** Wichita.

Dr. Eugene G. Petersen, a graduate of the University of Kansas School of Medicine who recently completed his internship at Menorah Hospital, Kansas City, Missouri, began practice in Humboldt on July 1 in association with **Dr. Charles E. Vestle. Dr. R. G. Snodgrass,** who formerly practiced with Dr. Vestle, went to Kansas City to begin a four-year residency in neurosurgery at the University of Kansas Medical Center.

A Wichita physician, **Dr. Marvin H. Hird,** went to St. Louis last month to begin a three-year residency in obstetrics and gynecology.

Dr. Edward E. Long, Humboldt, spoke on "Hypnosis, the Art of Relaxation" at a meeting of the Allen County Medical Assistants' Society in Iola last month.

Plans to retire from practice have been announced by **Dr. James E. Wallen,** Ottawa. During his years of practice in Ottawa, since 1932, he estimates that he has delivered more than 1,300 babies.

Dr. D. M. Diefendorf, Waterville, accompanied by Mrs. Diefendorf, is spending two months in Europe. During his absence his practice is being cared for by his son, **Dr. D. C. Diefendorf,** who is on the staff of the Tulane University Medical School in New Orleans.

A tribute to **Dr. Harry L. Cobean,** Wellington physician who is practicing although he is 86 years old, was published in the *Wellington Daily News* last month.

Dr. Glen E. Martin, Jr., who has been practicing in WaKeeney, is now in Wichita for a two-year residency in anesthesiology at St. Francis Hospital. He plans to practice in Wichita in association with **Dr. Ray Parmley** on completion of the course.

Two physicians who were 1957 graduates of the University of Kansas School of Medicine, **Dr. Car-**

DEATH NOTICES

Jacob Harlow Enns, M.D.

Dr. J. H. Enns, 76, retired physician in Newton, died on June 26 after having been in poor health for 10 years. He was an honorary member of the Harvey County Medical Society. A graduate of the University of Chicago Medical School in 1911, Dr. Enns practiced in Inman until 1920, when he went to Vienna for postgraduate study in eye, ear, nose and throat work. On his return to this country in 1922 he began specialty practice in Newton, retiring in 1947. Two sons, Dr. Eugene K. Enns and Dr. James H. Enns, both of Newton, are among the survivors.

John Albert Phillipsen, M.D.

A physician who had practiced in Wellington for 30 years, Dr. J. A. Phillipsen, 86, died at a hospital there on June 28. He received his medical education at Northwestern Medical College, St. Joseph, graduating in 1894. For ten years during his practice in Wellington he served as coroner of Sumner County. He was an honorary member of the Tri-County Medical Society.

Ralph Waldo Emerson, M.D.

Dr. R. W. Emerson, 65, Topeka physician for 35 years, died on July 1 after an illness of several months. After graduation from the University of Kansas School of Medicine in 1921, and internship there, he began practice in Topeka. He was especially interested in anesthesiology. He was an active member of the Shawnee County Medical Society, an organization he had served as president. He was a charter member of the Topeka Optimist Club and was active in the American Legion and the Civil Air Patrol.

lyle M. Dunshee and **Dr. Earl D. Merkel,** completed internships at Wesley Hospital, Wichita, on July 1 and began practice in Russell.

Dr. Charles R. Rombold, Wichita, was recently elected to membership in the American Orthopedic Association.

A Kansas City pediatrician, **Dr. Frederick A. Speer,** is the author of a book, *The Management of Childhood Asthma,* published last month by Charles C Thomas, Publisher, Springfield, Illinois.

Dr. Lafe L. Bresette and **Dr. Clarence A. Gripkey** were recently named to the Kansas City-Wyandotte County Health Board.

Among speakers at a Health Education Workshop held at Lawrence in June were **Dr. Thomas P. Butcher,** Emporia, president of the Kansas Medical Society, and **Dr. Edward D. Greenwood,** of the Menninger Foundation, Topeka.

Dr. Clement C. Vickery recently joined the Department of Neuropsychiatry at the Hertzler Clinic, Halstead. A graduate of Harvard Medical School, Dr. Vickery served in the Navy before beginning residency training in Topeka.

Physicians in Pratt County sponsored "Polio Dollar Day" in June and in July in cooperation with the National Foundation for Infantile Paralysis, and the Pratt Junior Chamber of Commerce. The purpose was to urge family immunization. Another such clinic will be held later.

Dr. M. E. Sturgis, a 1957 graduate of the University of Kansas School of Medicine who served his internship at Research Hospital, Kansas City, Missouri, is now practicing in Concordia at the Gelvin-Haughey Clinic.

Two county medical societies have established telephone exchange service recently, the Riley County Society with headquarters in Manhattan and the Ford County Society in Dodge City.

Dr. Paul J. Uhlig, a graduate of the University of Kansas School of Medicine who has served his internship at Navy Hospital, Oceanside, California, was recently awarded a two-year pediatric residency fellowship by Wyeth Laboratories. He will receive a grant of $4,800. He has elected to take his studies at the University of Kansas Medical Center.

Members of the Labette County Medical Society were guests of the county bar association at a dinner meeting at Parsons one evening last month. Films on medical-legal subjects were shown.

Dr. W. P. Callahan, Jr., Wichita pathologist, is director of the Bethel Deaconess Hospital School of Medical Technology, Newton. The school, in connection with Bethel College, has been approved by the American Medical Association.

Dr. Glen E. Martin, WaKeeney, has moved to Wichita to begin a residency at St. Francis Hospital. He resigned as Trego County coroner at the time of his move, and **Dr. R. B. Osborn,** WaKeeney, has been appointed to serve in that position.

A trip to Europe in October is being planned by **Dr. and Mrs. Ira Morrison,** Atchison. Dr. Morrison will be a speaker at a meeting of the International College of Allergy in Paris.

Dr. D. Cramer Reed, Wichita, recently was elected a member of the Wichita University Board of Regents. He was chosen by the Board of Education of the city.

Members of the Bourbon County Medical Society entertained 50 physicians in a nine-county area at a dinner meeting at Fort Scott one evening last month. Speaker for the meeting was **Dr. Victor G. McDonald** of Kansas City.

Dr. Herman W. Hiesterman, who has been studying surgery at St. Elizabeth's Hospital in Lincoln, Nebraska, during the past year, returned to practice in Quinter last month.

Plans to practice in Kingman in association with **Dr. George E. Burket, Jr.,** and **Dr. Sam Zweifel**

have been announced by **Dr. James G. Ruggles,** a 1957 graduate of the University of Kansas School of Medicine who has just completed internship at General Hospital, Kansas City, Missouri.

Dr. Robert C. Long, who was graduated from the University of Kansas School of Medicine in 1953 and has since been receiving postgraduate training in surgery at St. Luke's Hospital in Kansas City and at the Cleveland Clinic Foundation, has opened an office in Norton.

The Trueheart Clinic, Sterling, announces that **Dr. Theil Bloom,** a 1957 graduate of the University of Kansas School of Medicine, is now a member of its staff. He served his internship at Wesley Hospital, Wichita.

Dr. Karl A. Menninger, Topeka, will be a speaker at the 15th annual meeting of the American Medical Writers' Association in Chicago next month.

The Samuel J. Crumbine award was made posthumously for the first time this year, honoring the late **Dr. Vernon M. Winkle,** who was director of local health services for the Kansas State Board of Health until his death on December 31, 1957.

Dr. Franklin D. Murphy, chancellor of the University of Kansas, returned last month from a trip to Europe which included a tour of Soviet Russia.

A feature story, "The Case for a National Relative Value Scale," written by **Dr. Barrett A. Nelson,** Manhattan, was published in the July 7 issue of *Medical Economics.*

Officers of the Pratt County Pharmaceutical Association were guests of the Pratt County Medical Society at its meeting on July 9. Common problems of increasing welfare costs were discussed.

Dr. Robert E. Stowell, head of the Department of Pathology and Oncology at the University of Kansas School of Medicine and president-elect of the International Academy of Pathology, was one of the speakers last month at the International Cancer Congress in London.

A physician who was discharged from the Air Force in June, **Dr. Robert A. Nash,** has begun practice in Olathe in association with **Dr. Edmer Beebe.** He is a graduate of the University of Kansas School of Medicine and served his internship at Tripler Army Hospital, Honolulu, prior to entering military service.

Dr. Fowler B. Poling and **Dr. Thomas H. Fender,** Wichita, announce that **Dr. Hugh D. Riordan** is now associated with them in neuropsychiatric practice.

Pediatric Society Meeting

The Kansas Pediatric Society will hold its annual scientific session at the Broadview Hotel, Emporia, on Saturday, September 6.

The schedule for the day is as follows: 9:00, registration and coffee hour; 10:00, scientific session; 1:00, luncheon; 2:00, scientific session, ending at 5:00 and followed by a business meeting, committee reports, a social hour, and the annual society banquet at 7:00.

Scientific sessions will be entirely on pediatric cardiology. Dr. Sam McNamara, pediatric cardiologist of the Baylor University College of Medicine and Texas Medical Center at Houston, will talk on "Evaluation of Heart Murmurs in Children," "Selection of Patients for Open-Heart Surgery," and "Postoperative Results Following Open-Heart Surgery." Dr. Robert F. Ziegler, pediatric cardiologist at the Henry Ford Hospital in Detroit, will discuss "The Normal Electrocardiogram in Infancy and Childhood" and "Electrocardiographic Changes in Congenital and Acquired Heart Disease in Infants and Children."

The Kansas Pediatric Society invites any members of the Kansas Medical Society or physicians in surrounding states who are interested in the subjects to be discussed to attend the meeting. Advance registration may be made through Dr. T. C. Hurst, 405 KFH Building, Wichita.

Passenger cars were involved in over 78 per cent of all United States traffic fatalities in 1957 and in 86 per cent of traffic injuries.

Week-ends are the most dangerous time to be on United States highways. In 1957, more than 55 per cent of all fatalities occurred on Fridays, Saturdays, and Sundays.

Clinicopathological Conference

Prolonged, Progressive Cough and Dyspnea Leading to Intractable Heart Failure

Case Presentation

This 37-year-old white woman was admitted to KUMC for the seventh time on March 16, 1957, and died on April 10, 1957.

She was first admitted on September 18, 1948, complaining of fatigue, weight loss, and cough for the past two years. She had been in good health until 1946 when she had a gradual onset of a dry, hacking, non-productive cough without fever or hemoptysis. During the next two years she had moderate anorexia, persistent fatigue, and a weight loss of 25 pounds. In 1947 she was hospitalized elsewhere, and at that time diagnostic procedures, including a bronchoscopy and sputum cultures, did not disclose any abnormalities. She gave no history of exposure to known toxins. She had smoked two packages of cigarettes daily for about ten years.

She had worked as a practical nurse for one year in a tuberculosis sanatorium when she was 18 years old. She had complained of "sinus trouble" for about ten years. She had had no operations.

The patient was a well developed but thin, chronically ill, white woman. Her blood pressure was 110/80; pulse rate, 80; the respiratory rate, 34. The breath sounds were diminished, and scattered, coarse inspiratory and expiratory rales were heard in all lung fields. The cardiac tones were normal, and there were no murmurs.

The red blood count was 4,500,000 with 12.5 gm. of hemoglobin. The white count was 7,200 with 63 per cent neutrophiles, 8 per cent eosinophiles, 20 per cent lymphocytes, and 9 per cent monocytes. The non-protein nitrogen was 30 mg. per cent; serum albumin, 4.08 gm. per cent; serum globulin, 2.32 gm. per cent. Tuberculin and histoplasmin skin tests were both positive.

She received streptomycin for one week but had a severe reaction to this drug. She was discharged on October 2, 1948.

During the next four years her symptoms of dyspnea, cough, and fatigue became more marked. She was hospitalized at the Mayo Clinic in 1950, and at that time pulmonary function studies revealed a vital capacity of 1.84 liters. Skin tests for tuberculosis and histoplasmin were positive, but animal inoculations for tuberculosis and fungi proved negative. She had taken cortisone for several months and had received various antihistaminics and antibiotics. Her weight was 105 pounds.

She was in this hospital for the second time from April 27, 1952, to May 8, 1952, and her chief complaint at that time was chest pain and dyspnea.

Her third admission was from May 20, 1952, to June 7, 1952, when she complained of having had three episodes of recurrent spontaneous pneumothorax on the right side. The physical examination was essentially the same as on the preceding admission with the exception of changes consistent with right pneumothorax and accentuation of the second pulmonic heart sound.

At that time the red blood count was 4,500,000 with 13.4 gm. of hemoglobin. The non-protein nitrogen was 27 mg. per cent; serum albumin, 4.99 gm. per cent; and serum globulin, 2.51 gm. per cent.

During her fourth admission, July 17, 1952, to August 20, 1952, a partial right pleurectomy and a lung biopsy were done.

She was fairly well during 1953 and 1954 and was able to resume most of her usual activities, although cough and dyspnea were constant symptoms. Her principal medications at that time consisted of bronchodilators, cortisone, and broad spectrum antibiotics. The dyspnea increased markedly during the few months before her fifth hospitalization. In November, 1956, she first noted edema of the feet and ankles, orthopnea, and abdominal swelling associated with intermittent abdominal pain.

She was admitted for the fifth time on February 29, 1956, complaining of dyspnea and swelling of the feet and ankles. She was chronically ill and dyspneic at rest. Her blood pressure was 120/90, and her respiratory rate was 32. There were diminished excursions of the chest; fremitus was intact; there was hyperresonance at the bases. Breath sounds were diminished, and coarse, moist rales were heard in both bases. The second pulmonic sound was greater than the second aortic sound. No cardiac murmurs were heard. The liver was palpable 4 cm. below the right costal margin and was tender. There was bilateral two plus pitting edema below the knees.

The red blood count was 5,050,000 with 16.2 gm.

Edited by Jesse D. Rising, M.D., and Mahlon Delp, M.D., from recordings of the conference participated in by the departments of medicine, pediatrics, surgery, radiology, and pathology of the University of Kansas Medical Center, as well as by the third and fourth year classes of medical students.

of hemoglobin; the hematocrit was 50 ml. The white count was 6,000 with a normal differential. The serum carbon dioxide was 22.7 mEq/L; sodium, 143 mEq; potassium, 4.5 mEq; chloride, 101 mEq.

She was digitalized and placed on a low salt diet. She lost 18 pounds and was discharged on March 15, 1956.

She was readmitted for the sixth time on March 25, 1956, complaining of dyspnea and a productive cough. At that time she was treated with prednisone, gitalin, antibiotics, bronchodilators, phlebotomy, and oxygen. The femoral oxygen saturation was 94.6 per cent; carbon dioxide, 32.3 mEq/L; serum sodium, 135 mEq; potassium, 6.0 mEq; chloride, 103 mEq. She slowly improved, and she was discharged on May 9, 1956.

After her discharge she was seen frequently in the outpatient department and was treated with multiple phlebotomies, gitalin, bronchodilators, prednisone, and antibiotics. She was on continuous oxygen while at home.

Her final admission was on March 16, 1957, because of inability to control the edema. Her symptoms had not changed remarkably except for increased dyspnea at rest and persistent peripheral edema and ascites. She continued to smoke an average of one package of cigarettes a day.

She appeared emaciated, and her skin was dark. Her blood pressure was 120/80, and her pulse rate was 110. She was not cyanotic. The antero-posterior diameter of her chest was increased; the accessory muscles of respiration were hypertrophied; and the rib cage was relatively fixed. The breath sounds were diminished throughout, and scattered rales were heard in all lung fields. The heart was enlarged; the second pulmonic sound was markedly accentuated, but no murmurs were heard. The liver was felt 4 cm. below the right costal margin. The abdomen was mildly distended, and there was 3 plus peripheral edema in the legs.

The serum carbon dioxide was 3.4 mEq; sodium, 143 mEq; potassium, 6.3 mEq; chloride, 101 mEq. The hemoglobin was 12.8 gm. with a hematocrit of 44 ml. The serum albumin was 4.82 gm. per cent; globulin, 1.98 gm. per cent; calcium, 5.0 mEq/L; phosphate, 2.7 mEq.

Her weight on admission was 82 pounds, and she gained eight pounds despite vigorous therapy to promote diuresis. The dyspnea and bronchospasm increased, and she died on April 10, 1957.

Dr. Mahlon Delp (moderator): Our patient had been under the observation of sundry staff members for over nine years, and, in addition to being seen here, she also had examinations at various other medical centers, including one at Chicago, the University of Pennsylvania, the University of Iowa, and the Mayo Clinic. Now, are there any questions?

Luis Bianchini (fourth year medical student):* Was there any clubbing of the fingers?

Dr. Delp: There may have been some, but it certainly was not evident.

Eugene Bianchini (fourth year medical student): Did she ever have contact with fluorescent lamps or anything of that nature?

Dr. Delp: No.

Larry Ball (fourth year medical student): What were the maximum red cell factors before phlebotomy at any time?

Dr. Delp: The hemoglobin was 16 to 17 gm.

Loren Akers (fourth year medical student): Was the oxygen saturation taken while she was receiving oxygen during her fifth admission?

Dr. Delp: No, it was not.

LeRoy Androes (fourth year medical student): Will you describe her cough during the fifth and sixth admissions?

Dr. Robert Brown (resident in medicine): It was only during these two admissions that she had a productive cough, which amounted to only two to three tablespoonfuls a day.

Mr. Almers: What was the color of her skin?

Dr. Brown: It was diffusely pigmented.

Mr. Akers: Did it appear tanned?

Dr. Brown: Yes.

Mr. Bianchini: Did it look like melanosis?

Dr. Brown: Yes, it did.

John Benage (fourth year medical student): What was the venous pressure?

Dr. Brown: It was 125 mm.

Mr. Androes: Were the pulmonary functions observed?

Dr. Brown: The vital capacity in 1952 was 1.7 liters. This was repeated here at this hospital and was 1.66 liters.

Dr. Delp: The maximal breathing capacity in September, 1954, was 29.3 liters. The vital capacity was 1515 ml., and one second vital capacity was 900 ml.

Mr. Ackers: What was the result of the biopsy?

Dr. Delp: It showed an acute and chronic granulomatous pneumonitis, but no giant cells were seen.

Mr. Almer: Were fungi cultured?

Dr. Delp: No.

Mr. Androes: What was her temperature course?

Dr. Brown: There was a slight elevation in temperature during her first admission, but otherwise she was afebrile throughout all of the early stages of the disease. She had no fever at all during the last 28 days of her hospitalization.

---

* Through a medical student at the time of this conference in December, 1957, he, like the others referred to as students, received the M.D. degree in June, 1958.

Mr. Ball: Was there any history of chronic exposure to roentgen radiation?

Dr. Delp: No, there was not.

Mr. Akers: What was the VDRL?

Dr. Delp: It was non-reactive.

Mr. Bianchini: What was the report of the complement fixation studies for histoplasma?

Dr. Delp: Negative.

Mr. Androes: Was she oliguric?

Dr. Brown: The urine output was adequate; it decreased, however, during her last few days.

Mr. Benage: Was there any indication of allergy?

Dr. Delp: No, there was not. Now, if there are no more questions, may we have the electrocardiograms, please?

Mr. Almer: The first electrocardiogram taken on April 29, 1952, shows a rate of about 65 and a normal sinus rhythm (Figure 1). There is a prominent S wave in lead I and a prominent R wave in lead III. The P and T waves are flat in lead I; P waves are low in leads V_4 and V_5; T waves are low in leads V_4, V_5, and V_6. I interpret this tracing as showing right axis deviation.

The next electrocardiogram, taken March 1, 1956, shows a rate of approximately 100. The most prominent feature of this tracing is the configuration of the P waves in leads II and III. There is an increase in the P waves throughout all of the chest leads. The S waves in lead I are deeper than in the first tracing, and the R waves are higher in lead III. The T waves are again absent in leads V_4, V_5, and V_6, which is characteristic of right ventricular hypertrophy. The QRS complex is characteristic of systolic overloading. The T waves throughout would indicate myocardial ischemia. I believe this tracing is compatible with chronic pulmonary disease with right atrial hypertrophy.

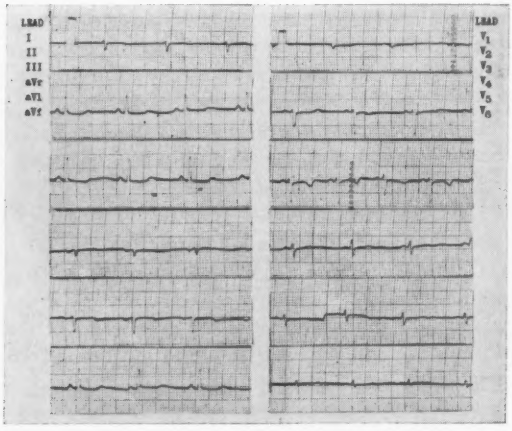


Figure 1. First electrocardiogram, April 29, 1952.

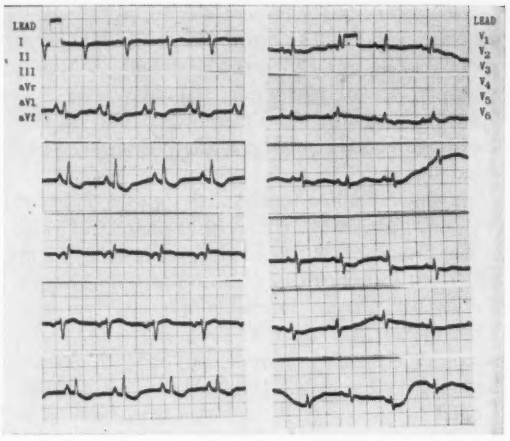


Figure 2. Last electrocardiogram, January 31, 1957.

The last tracing, taken on January 31, 1957, shows a rate of 110 and a normal sinus rhythm (Figure 2). The P waves are again prominent in leads II, III, and aVF. Large R waves in V_1 and V_2 are associated with delay in the onset of the intrinsicoid deflection. This tracing indicates right ventricular hypertrophy and systolic overloading. The QRS-T configuration in lead II may indicate digitalis effect.

Dr. Delp: Thank you. May we have the x-rays, please?

Mr. Ball: The first x-ray was taken at the state

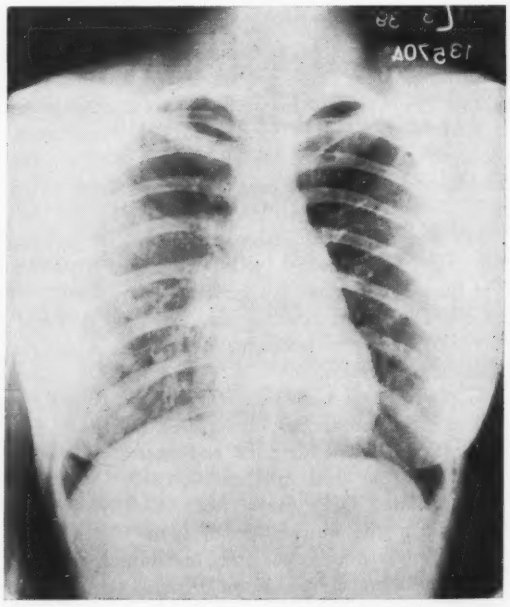


Figure 3. First chest x-ray taken at state sanatorium in November, 1939.

sanatorium, where she worked, in November 1939 before she apparently ever had any symptoms; it shows diffuse fibrosis in the hilar regions and in the lung fields (Figure 3). There are no bony abnormalities. There is a prominent pulmonary conus in this film. There is no enlargement of the heart. There is widening between the ribs.

The film taken in 1947 shows an increase in the fibrosis and widening between the ribs. There is blunting of the costophrenic angles, but they are clear. There is enlargement of the pulmonary conus.

A film taken in 1949 shows increased fibrosis. The Ghon complexes (which have been present in all of the films) are also seen here. There is marked enlargement of the pulmonary conus.

In a film taken in 1952 the fibrosis is shown as increasing and fanning out from the hilar regions. There is emphysema and more plaques on the diaphragm; there is a barrel-chest appearance and enlargement of the right atrium and pulmonary conus.

In March, 1956, the x-ray film showed more diffuse fibrosis and an increase in emphysema and pulmonary conus (Figure 4). The last film taken in January, 1957, shows the increased emphysema, and, again, there is enlargement of the atrial shadow and pulmonary outflow tract. On the lateral film the right ventricle appears to be in a forward position. The aorta does not appear atherosclerotic. There is diffuse fibrosis, and more emphysema is present in the bases.

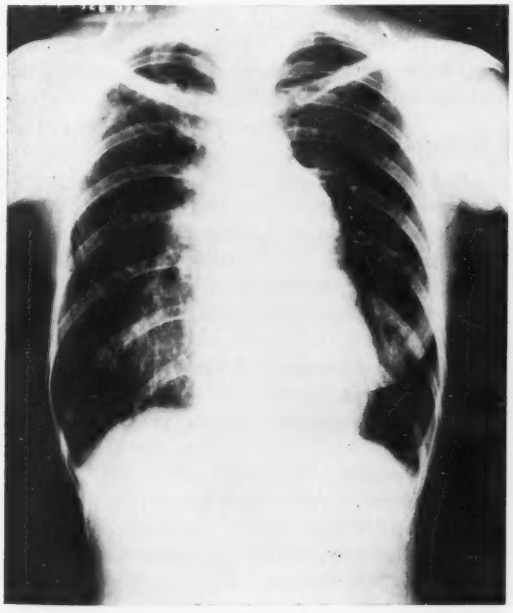


Figure 4. Chest x-ray taken in March, 1956.

These films are compatible with a diffuse infiltrating process that appeared before the development of symptoms and are compatible with sarcoid, Hamman-Rich syndrome, chronic radiation damage, pneumoconiosis, or tuberculosis.

Dr. Delp: Dr. Tice, do you have any comment?

Dr. Galen Tice (radiologist): The film taken in 1947 was our first contact with this patient. That film of the lung showed a nodular development which raised the question of a number of things: tuberculosis, smoker's disease, chronic heart failure, and many others. In regard to the question of radiation exposure, I do not know what her radiation exposure was before she came to this hospital. Forty-eight films were taken here.

Dr. Delp: In summary, our patient was a 37-year-old white woman who had been observed almost constantly over a ten-year period during which she had a progressive increase in cough and disability. On her last two admissions to this hospital she complained, for the first time, of edema of the feet and ankles and, lastly, there was enlargement of the abdomen with ascites. She had two episodes of spontaneous pneumothorax. At one time an exploratory thoracotomy was performed in an attempt to seal the pleura, visceral to parietal, and to close a fistulous opening. At that time a biopsy was also done. She had been given the usual bronchodilators and had had steroids continuously for almost four years. She was finally given digitalis. Mr. Benage, may we have your discussion, please?

Differential Diagnosis

Mr. Benage: I would first like to quote Peabody who is an authority on pulmonary diseases. He states: "Of all the problems common to the field of chest diseases there is none more challenging than the differential diagnosis of diffuse pulmonary disease with seemingly endless diagnostic possibilities. Clinical findings tend to be obscure, and seldom are the usual laboratory tests of any help whatsoever."[3]

I shall base my differential diagnosis on diseases that cause pulmonary insufficiency and, ultimately, heart failure. First, I shall rule out pulmonary syphilis because it is a relatively rare entity, and there was no history of a primary lesion, no physical findings of secondary or tertiary disease, and a negative serology. The pneumoconioses can be ruled out because there was no history of exposure. I dismiss actinomycoses because there is involvement of the face, jaw, and neck in at least 60 per cent of the cases, but these were absent in our patient. Also, there was no demonstration of sulfur granules, no sinus formation, and no physical findings suggesting consolidation.

There were no manifestations of blastomycosis, coccidioidomycosis, histoplasmosis, or cryptococcosis. Collagen diseases such as lupus erythematosis and periarteritis nodosa can be dismissed as likely possibilities because of failure to demonstrate involvement of multiple organ systems over a period of 11 years. The classic example of malignant metastatic tumors of the lung would be lymphogenic carcinomatosis of the lung with primary carcinoma of the breast, but our patient had no primary lesion during these 11 years. Radiation fibrosis has already been mentioned, but there was no exposure until she was 20 years of age.

Multiple pulmonary emboli may be a cause of pulmonary insufficiency, but there were no physical findings to support this diagnosis. I have little doubt, however, that our patient did have some pulmonary emboli during the course of her illness, as cardiac decompensation and peripheral stasis and stagnation provided excellent circumstances for the development of the thromboses of the leg and pelvic veins with subsequent emboli from this source.

Factors against the diagnosis of granulomatosis and allergic angiitis are the absence of manifestations of general arteritis or history of terminal renal insufficiency.

I believe that she did have some degree of bronchiectasis, but I shall dismiss this as a primary disease in the absence of large amounts of sputum.

Tuberculosis should be considered as a possible diagnosis, but there was no history of night sweats or prolonged fever, no acid fast bacilli, and no positive sputum cultures. Sarcoidosis should also be considered, but factors against this diagnosis are the absence of fever, skin lesions, bone lesions, hypercalcemia, or anergy to tuberculin and histoplasmin skin tests over 11 years.

The Hamman-Rich syndrome or diffuse fibrosing interstitial pneumonitis may be acute or chronic; the etiology is unknown. Patients usually complain of cough, dyspnea, and cyanosis. About 50 per cent of these patients develop right ventricular failure, resulting in death. The x-rays show diffuse nodular infiltrating lesions, but I shall rule out this disease because of her prolonged course.

There are four types of emphysema: compensatory, senile, obstructive and idiopathic, hypertrophic. I believe that, as a result of smoking, our patient had sinusitis with the development of chronic bronchitis and idiopathic emphysema. Asthma may also be a factor. The classic picture of emphysema is one of chronicity: the patient develops asthma and chronic sinusitis, and often has been a smoker for many years. Pulmonary insufficiency slowly develops, and there is a decreased vital capacity. Classic physical findings develop such as increased antero-posterior diameter, rapid respiration, decreased excursions, fixed chest cage, hypertrophy of accessory respiratory muscles, hyperresonance of the chest with decreased breath sounds, and increased second pulmonic sound with pulmonary hypertension. Finally, there is right ventricular failure with the usual complications of spontaneous pneumothorax and respiratory acidosis. The chest x-ray characteristically shows a flattened diaphragm, increased radioluscency, and increased vascular markings.

I believe that when our patient was a child she had a mild asthmatic allergy and a sinus infection. At 16 years of age she began to smoke two packages of cigarettes a day, and a chronic bronchitis developed which, together with bronchial edema and spasm, produced emphysema. Dyspnea, cough, and weight loss were progressive symptoms. The spontaneous pneumothorax was the direct result of ruptured emphysematous blebs. To compensate for the hypoxia, a secondary polycythemia developed. Because of the diminished capillary bed, pulmonary hypertension developed, and with the myocardial hypoxia and increased cardiac work load, she eventually had right heart failure. The emphysema was consistently aggravated by smoking which caused marked bronchial spasm. I believe that while she was in heart failure she had several pulmonary emboli from the thrombi in the leg veins which caused increased pulmonary insufficiency and right heart failure. I believe that terminally she developed a pulmonary embolus and ventricular fibrillation.

My final diagnosis is idiopathic emphysema, secondary chronic bronchitis, and subsequent right heart failure resulting in death.

Clinical Discussion

Dr. Delp: Thank you. Mr. Bianchini, what is your diagnosis?

Mr. Bianchini: Diffuse interstitial fibrosis of the Hamman-Rich type.

Dr. Delp: Mr. Androes?

Mr. Androes: Sarcoidosis.

Dr. Delp: Mr. Acker?

Mr. Acker: Hamman-Rich syndrome.

Dr. Delp: Mr. Akers?

Mr. Akers: Interstitial fibrosis, probably smoker's emphysema.

Dr. Delp: Mr. Almer?

Mr. Almer: Smoker's emphysema.

Dr. Delp: Mr. Ball?

Mr. Ball: Hamman-Rich syndrome.

Dr. Delp: Mr. Bianchini, what does the term "compliance" mean?

Mr. Bianchini: The term "compliance" means the

expansion of the lungs because of the recoil mechanism.

Dr. Delp: Mr. Ball?

Mr. Ball: It refers to the elasticity of the lungs.

Dr. Delp: Mr. Benage?

Mr. Benage: The lungs have a certain recoil ability, and if this ability from inspiration decreases then compliance is low.

Dr. Delp: Mr. Bianchini, was this primarily a failure in circulatory irrigation through the lung, or do you believe it was a failure in ventilation?

Mr. Bianchini: It probably was failure of ventilation in the early stages of the disease.

Dr. Delp: Mr. Androes?

Mr. Androes: A shunting mechanism sometimes develops between the arteries and veins and, together with an inadequate mixing of gases, may produce chronic hypoxia.

Dr. Delp: Mr. Akers?

Mr. Akers: Diffusion of oxygen in the alveolar capillaries was impeded by the fibrosis.

Dr. Delp: Mr. Almer?

Mr. Almer: I believe that after the shunting mechanism developed the blood was shunted through by the left azygous veins.

Dr. Delp: Mr. Ball, do you have any comment?

Mr. Ball: I believe it was diffusion because our patient was able to hyperventilate alveoli of the lungs and, initially, to keep the carbon dioxide low, but as the diffusion decreased the carbon dioxide was elevated.

Dr. Delp: Mr. Bianchini, how do you explain the tachypnea?

Mr. Bianchini: The lung capacity had been tremendously reduced and, in order to get sufficient oxygen, she had to breathe much faster.

Dr. Delp: Mr. Acker, do you agree with that?

Mr. Acker: Yes, I do.

Mr. Benage: I believe the increased rate was due to stimulation by the elevation of the carbon dioxide.

Dr. Delp: Mr. Bianchini, how do you explain the generalized melanosis of her skin?

Mr. Bianchini: Persons with chronic diseases usually have melanosis of the skin.

Dr. Delp: Dr. FitzPatrick, do you have any comment?

Dr. Martin FitzPatrick (internist): The outstanding feature of this case is that the patient, as a young girl, was free of any significant pulmonary disease, but during the last 11 years of her life she became afflicted with a disease that was relentlessly progressive resulting in her death at the age of 37 years. This tends to rule out the more common forms of severe pulmonary disease found in women. We know that she was infected with the tubercle bacilli; we know that she experienced infection with Histoplasma capsulatum because of the positive skin test. We also know that about five years before her death she began to have rupture of bullae in her right upper lung field. She probably had localized areas of emphysema.

An outstanding feature is her difference from the chronic pulmonary patient who usually shows a more classical emphysema than she did. I believe that Dr. Delp has been emphasizing the fact that she was not cyanotic, that resting arterial saturation in the mid-90's is good, and suggesting that this was not the usual kind of emphysema so ofter seen in the elderly male. There, due to differences in distribution of air and in blood supply to the alveoli, there are many cases of a shunting mechanism. Many of them are hypercapneic; many are more hypoxic. I believe that our patient's disease was degeneration of the lungs with fibrous replacement of her lungs with an interstitial alveolar and probably a vascular sclerosis. This probably does not represent a so-called type of degenerative destructive emphysema often seen primarily as a disease of the elderly. I believe that this is a disease of unknown etiology, and that it is one that we will see more and more in the future.

Dr. Delp: Dr. Bolinger, do you have any information that might fit in with a diagnosis of sarcoidosis?

Dr. Robert E. Bolinger (internist): As pointed out by Mr. Benage, there was no hypercalcemia or hyperglobulinemia with which to make the diagnosis of sarcoidosis. It is noteworthy that those two features cannot be too easily discarded because our patient probably had been receiving corticoids for some time. It is known that in sarcoidosis the hypercalcemia is probably a result of hyperabsorption of calcium by the intestine, probably related to a hypersensitivity to vitamin D. For that reason, cortisone is rather specific in lowering the plasma calcium elevation which may occur in these patients because it blocks the absorption of calcium. I believe we should not discard the normal calcium values, but, by the same token, we should not discard the lack of hyperglobulinemia.

Dr. Delp: Dr. Schlesinger, do you have any comments about the cardiovascular signs or symptoms the patient later manifested?

Dr. Paul Schlesinger (internist, University of Brazil School of Medicine): I believe our patient probably had an obstructive pulmonary vascular disease, but I do not believe she had the hypoxic type of chronic cor pulmonale. She had some degree of hypoxia, but her main problem was diffuse pulmonary vascular obstruction on the basis of some obscure type of pulmonary fibrosis which primarily affected the pulmonary vascular bed. She developed progressive right ventricular hypertrophy, chronic cor pulmonale, and right heart failure.

Figure 5. Emphysematous lung showing cysticly dilated air spaces and fibrous thickening. Hematoxylin and eosin X45.

An interesting aspect of this case is the marked degree of dyspnea which obviously was not on the basis of heart failure. Her respiratory symptoms during the last stages were not related to heart failure because she had no left heart failure. She may have developed a pulmonary complication or infection which caused dyspnea and respiratory difficulty. Her cardiac signs and symptoms were essentially those of right heart involvement, right ventricular hypertrophy, and right heart failure. I agree that the disease was an obscure type of pulmonary fibrosis.

Dr. Delp: Thank you. Dr. Wilson, you observed this patient for nearly ten years. What was your initial diagnosis?

Dr. Sloan Wilson (hematologist); My first diagnosis was sarcoidosis with possible fungus infection.

Dr. Delp: Mr. Benage, I am glad that you emphasized the cigarettes; they impressed me, too. May we have the pathology report now, please?

Pathological Report

Dr. O. Dale Smith (pathologist): The lungs together weighed 940 grams. They were expanded, and the surfaces were mottled with anthrocotic pigment. Firm adhesions of visceral and parietal pleura were present, particularly over the right upper and middle lobes and over the inferior surface of the right lower lobe binding it to the diaphragm. The immediately arresting changes in the lungs were myriads of emphysematous cysts ranging in diameter from 4 to 12 mm. and extensive fibrosis of the intervening tissue. These were diffuse changes affecting the entire parenchyma of both lungs. The microscopic sections demonstrated ruptured aveolar walls producing the cystic chambers lined by cuboidal cells (Figure 5). The individual alveolar septae were increased to several times their normal thickness (Figure 6), and there were broad sheets of collagen in many areas. The bronchioles were ectatic, and many showed significant hyperplasia of their circular muscular coat. In some fields we found irregular masses of smooth muscle fibers with no associated bronchus or bronchiole, the bronchi having been destroyed and only the muscle remaining to indicate their previous existence.

The major pulmonary arteries revealed typical atheromatous plaques having within the intima fibrous

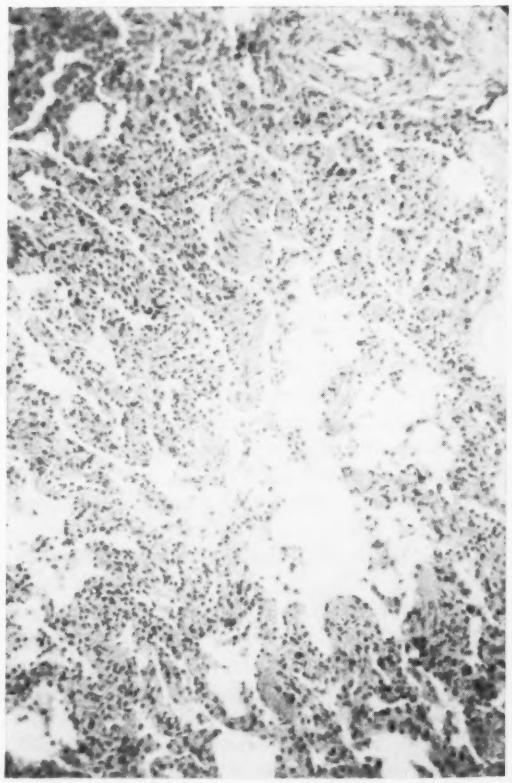


Figure 6. Lung. Marked fibrous thickening of alveolar walls. Hematoxylin and eosin X175.

tissue proliferations which contained foamy macrophages and fusiform clefts that stained deeply with lipid stains such as Oil Red O. The smaller arteries and arterioles had thickened walls, and elastic and connective tissue stains showed this thickening to be due to medial hypertrophy and fibrous intimal proliferation such that the lumens were significantly narrowed (Figure 7); these latter alterations were the result of pulmonary hypertension.

Stains for iron revealed hemosiderin-laden macrophages; however, the lack of hemosiderin in the vessels or in the alveolar walls militated against consideration of idiopathic pulmonary hemosiderosis.

The heart weighed 400 grams, the increased weight being the result of hypertrophy of the right ventricle, the myocardium of which measured 12 mm. in thickness. The left ventricle was dwarfed in comparison with the right. The tricuspid valve was dilated and measured 125 mm., and the right atrium had hypertrophied.

The liver weighed 900 grams. The lobular architecture was accentuated, and there were two unencapsulated but fairly well defined foci which, when examined microscopically, were consistent with regeneration nodules. The central lobular areas showed congestion and fibrosis with concomitant parenchymal atrophy. These changes suggested early cardiac fibrosis with incipient cardiac cirrhosis.

Figure 7. Lung. Artery with intimal hyperplasia associated with ectatic bronchiole and emphysematous parenchyma. Elastic stain X175.

A lung biopsy performed in 1952 showed a marked and diffuse proliferation of histiocytes and fibroblasts with smaller numbers of lymphocytes and neutrophiles. These changes were of a nonspecific nature and were in contradistinction to the striking lack of active inflammatory change in the lungs as seen in the postmortem examination. The biopsy gave an indication that the primary disease had an inflammatory process of undetermined etiology as its basis. That process had caused irregular obstructive phenomena in bronchioles leading to parenchymal emphysema and fibrosis and to bronchiectasis. The cardiac changes were those of cor pulmonale and were secondary to increased resistance in the pulmonary vasculature. Sarcoidosis was considered as a possible factor in the pathogenesis of our patient's disease. It should be noted that we found, at the hilum of the lung, a lymph node containing an old healed fibrocalcific nodule for which special stains failed to reveal an etiology. The biopsy in 1952, in contrast, showed a diffuse granulomatous lesion rather than a focal lesion and was not, in my experience, compatible with sarcoidosis.

Dr. Delp: Are there any questions for Dr. Smith?

Dr. Thomas J. Rankin (internist): I would like to know whether this was believed to be an acquired illness or whether there was a lung tissue sensitivity from birth?

Dr. Smith: I was unable to demonstrate that it was other than acquired. I do not know whether there is a familial or genetically induced predisposition to this apparently acquired disease.

Dr. Delp: Dr. FitzPatrick?

Dr. FitzPatrick: I do not believe we will know until test systems are set up to answer these questions. It is of interest that our patient had more or less lived through her life cycle, particularly the last 11 years, during the time when there was greatly increasing knowledge of the physiology and pathology of pulmonary disease. She represents a therapeutic failure, but we can say nothing definitely about the pathogenesis.

Dr. Rankin: I was attempting to emphasize further our diagnostic failure as well.

Dr. Delp: Dr. Bolinger, do you believe the steroid administration could have altered the characteristic findings of sarcoidosis?

Dr. Bolinger: I believe that it is quite possible.

Dr. Delp: Dr. Smith, what is your opinion?

Dr. Smith: I am not sure how long our patient had had steroids at the time of her biopsy; it was a diffuse lesion and did not remind me of sarcoid, although I do not know what the spectrum of changes would be which might be induced by steroids.

Dr. Sloan Wilson: What was the appearance of the adrenal glands?

Dr. Smith: The adrenal glands were moderately reduced in size and contained a good complement of lipids. These changes were consistent with moderate involution incident to steroid therapy.

Dr. Delp: Are there any other comments?

Mr. Bianchini: I would like to ask Dr. Smith how this lesion differs from that described by Hamman and Rich.

Dr. Smith: Actually Hamman and Rich were describing the end-stage of idiopathic pulmonary fibrosis and postulating an inflammatory process as an etiological factor. Certainly we have, in this case, a pulmonary fibrosis for which we have not demonstrated an etiology, and in this respect it agrees with Hamman and Rich.

Dr. Delp: Are there any other questions?

Mr. Akers: Did she have a normal pancreas?

Dr. Smith: Yes, she did.

Summary

Dr. Delp: This case report shows so clearly the irrevocable progress that fibrosing processes of the lung can take. An etiological agent could not be determined at any time during the ten years of observation, but likely no one agent was responsible. The terminal findings are quite characteristic of the syndrome described by Hamman and Rich. It is unfortunate that the additional irritation caused by smoking was not eliminated early. The final picture was that of complete cardiopulmonary failure with no unique characteristics.

Pathological Anatomical Diagnosis

Primary

Diffuse pulmonary fibrosis with cystic emphysema, bronchiolectasis, and bronchiectasis.

Pulmonary arteriolosclerosis and arteriosclerosis.

Cardiac hypertrophy and dilatation affecting the right ventricle and atrium.

References

1. Hamman, L., and Rich, A. R.: Acute diffuse interstitial fibrosis of the lung, Bull. Johns Hopkins Hosp. 74:177, 1944.

2. Heppleston, A. G.: The pathology of honeycomb lung, Thorax 11:77-93, 1956.

3. Peabody, J. Winthrop, and Peabody, J. Winthrop, Jr.: Diffuse fibrosing interstitial pneumonitis (Hamman-Rich syndrome), Dis. of Chest 26:709-711, Dec. 1954.

4. Rubin, E. H., and Lubliner, R.: Hamman-Rich syndrome: review of literature and analysis of 15 cases, Med. 36:397, 1957.

5. Siebert, F. T., and Fisher, E. R.: Bronchiolar emphysema, Am. J. Path. 33:1137, 1957.

Clinical Society Meeting in Kansas City

The 1958 fall clinical conference of the Kansas City Southwest Clinical Society will be held September 22 through 25 at the Municipal Auditorium, Kansas City, Missouri.

Fifteen guest speakers (see advertisement in center section) will participate in lectures, and there will be panel discussions, closed circuit color television, postgraduate breakfast seminars, round table luncheon quiz sessions, and specialized discussions. The breakfast seminars and specialized luncheon discussions will be limited in enrollment and early reservations are advised.

The premiere telecast of the special electronic equipment developed by Captain Norman Lee Barr, director of Aviation Medicine Research, will be presented on Tuesday morning, September 23. Physiological data will be transmitted from patients at the Bethesda Naval Hospital directly to the Municipal Auditorium. In addition, the vital data from a pilot flying a plane over Washington, D. C., will be beamed to the Bethesda Naval Hospital and relayed to Kansas City. This program will be a glimpse into the future when the facilities of the best diagnostic centers in the country will be available in every doctor's office.

All physicians who are members of their county medical societies are invited to attend. Programs may be obtained from the society, 3036 Gillham Road, Kansas City 8, Missouri.

Auxiliary in Kansas Wins

The Woman's Auxiliary to the Kansas Medical Society placed first among states of its size in the annual contest conducted by the national auxiliary for the sale of subscriptions to *Today's Health,* according to announcement made at the A.M.A. and Auxiliary meetings in San Francisco last month. Mrs. H. Lee Barry, Wichita, was chairman of the committee working on sales. Kansas competes with other states having Auxiliary memberships of between 1,001 and 2,000.

First prize for counties having memberships of less than 30 was won by a Kansas group, the Auxiliary in the Flint Hills, under the chairmanship of Mrs. Robert L. Obourn, Eureka. The Auxiliary in Sedgwick County, competing among groups of more than 150 members, placed first also. Mrs. Robert E. Hull, Wichita, served as chairman there.

Medicolegal Problems

Importance of Obtaining Consent to Operations

KIRKE W. DALE, ***Arkansas City***

The medicolegal aspects of the practice of medicine are daily becoming of greater importance, and those engaged in the practice of medicine should protect themselves to the greatest possible extent.

Many physicians and hospitals do not follow the practice of requiring the signing of appropriate medicolegal forms in situations where experience has shown that the signing of such forms might have prevented a lawsuit, or might have been the difference between victory and defeat in the event of litigation. In other instances, inadequate medicolegal forms are in daily use.

The so-called "blanket" consent forms, which purport to give the physician unlimited authority and discretion without specifying the particular operation contemplated, are used extensively. In the absence of a consent form that describes within reasonable latitude the nature of the operation or treatment to be performed, a jury can very easily choose to believe the "forgetful" patient whose recollection regarding the treatment he authorized has been dimmed by time or circumstances.

Up-to-date medicolegal forms, in my opinion, should be executed and kept in the physician's office and files, whenever reasonably possible.

Consent to Operations

The following pertains to surgical operations, but the principles of law are equally applicable to other examinations, procedures, or treatments in which the physician engages.

Authority is necessary before a physician may legally examine or treat a patient. A physician who operates upon a patient without having authority to do so, commits an assault and battery for which he may be prosecuted criminally or held civilly liable in damages. If the patient upon whom the unauthorized operation was performed is unable to prove that any actual damage occurred or was caused by the operation, he will usually be able to recover only nominal damages. It is no defense that the unauthorized operation was performed with due skill and care inasmuch as negligence is not an element of this cause of action. Authority for the performance of an operation may arise out of a legal duty or out of the consent of the patient or some one authorized to act in his behalf.

For instance, some states provide, by statute, for eugenic sterilization of feeble-minded persons and habitual criminals. If the law under which the operation has been authorized is a valid, constitutional law, and if the procedure leading up to the order for sterilization has been in conformity with that law, and if the operation is performed in accordance with the law and without negligence, the physician authorized to perform the operation incurs no personal liability in performing it, even over the objection of the patient. Similarly statutory authority protects physicians in charge of state mental institutions, prison physicians, and health officers charged with the enforcement of vaccination and quarantine laws. The conduct of all such officers is subject to review by the courts. If they act beyond the scope of their authority, or if they act in an unlawful manner, they are liable for the payment of damages and may be subject to criminal prosecution.

The authority to operate usually arises from the valid consent of the patient or someone legally authorized to act in his behalf. A valid consent, however, is no defense in an action for professional negligence. The consent given may be either express or implied and, if express, it may be either written or oral. The consent given must be an informed consent with an understanding of what is to be done and of the risks involved. The procedure involved and its attendant risks should be explained to the patient in understandable non-technical terms. The consent given may be invalid (a) because the act consented to is unlawful, or contrary to public policy, or (b) because the consent was given by one who had no legal authority to do so, or (c) because it was obtained by misrepresentation or fraud.

A valid consent to an operation must be the rational act of a qualified mind. The consent of the patient is sufficient if he (a) has attained his majority and (b) is, at the time of giving consent, competent to understand the nature and purpose of the operation proposed and the risks involved. The consent of the husband to an operation on his wife is not necessary, and the consent of the wife is usually sufficient authority. Nevertheless, it is advisable to have the joint consent of both spouses whenever practicable. This is

---

The author of this article has been serving as legal counsel to the Kansas Medical Society for many years.

particularly desirable if the operation involves danger to life, may destroy or limit sex functions, or may result in the death of an unborn child. A person who has attained his majority and is of sound mind is presumptively qualified to give or withhold consent. The presumption may be rebutted, however, by evidence showing that when the consent was given the person was drunk, or under the influence of drugs, or delirious, or comatose, or otherwise incapable to exercising rational judgment. Under such circumstances the law will infer consent if the patient's life was at stake and there was no one present to give consent in his behalf. The fact that a patient is being treated free or at the expense of some one else does not do away with the necessity for obtaining his consent.

The physician, in agreeing to perform the operation, does not, in the absence of a special contract, guarantee particular results or to cure. The physician warrants only that he possesses the degree of knowledge and skill ordinarily possessed by a member of the profession in good standing in the community and that he will use that knowledge and skill in the performance of the operation. However, a physician may expressly agree to accomplish a particular result or effect a cure. Admittedly, this is an unsound practice. If the physician enters into such a contract and fails to bring about the result or to effect the cure, he is liable for breach of contract even though he used the highest possible professional skill.

Consent to a criminal abortion is void because such an operation is unlawful. Consent to an experimental operation that will greatly endanger the life of the patient and which is not intended to relieve or cure his illness or injury, but solely to advance the science and art of medicine, is usually regarded as contrary to public policy and therefore void. Treatment involving an element of experimentation may properly be administered only with the full knowledge and consent of the patient or those legally responsible for him, and then only if the treatment does not vary too radically from accepted methods of medical practice.

An operation for sexual sterilization is generally regarded as contrary to public policy when such sterilization is not necessary for the cure or prevention of disease or anti-social conduct. Consent to a sterilizing operation is therefore probably void unless the operation is intended to cure or prevent disease or anti-social conduct or prevent a pregnancy that would endanger life.

Purported authority for an operation obtained by misrepresentation or fraud on the part of a physician is not valid authority and affords no protection. To represent to a patient that an operation is necessary to save life or to preserve health when that is not the case, or that it will give greater relief than there is any reasonable prospect of obtaining, is to perpetrate a fraud on the patient which vitiates his consent. Tactful honesty and frankness on the part of the physician are most essential.

Operations on minors, at least on those who have not attained years of discretion, may be lawfully authorized by the parents or by a guardian if there is no parent. If the minor has parents, consent must be obtained from them even though the minor is temporarily in the care of some other person. Where parents are legally separated or divorced, consent on behalf of the child should be obtained from the parent who has legal custody. It is particularly important that consent be obtained when the procedure to which the child is to be subjected is for the benefit of some other person, such as when he is serving as a blood or skin donor.

It is not clear whether a valid consent can be given by a child who has not attained his majority, although he is of sound mind and has attained the age of discretion. The fact that a child is legally qualified to make a contract for medical services as one of the necessities of life may be construed as authorizing him to consent to an operation, at least when the cost thereof is to be paid by him from his own funds. There may be a conflict, however, between the authority of the parent and the authority of the child, if a child is under treatment at the expense of his parents. In such cases, it is best that the physician refrain from action until the question of authority is settled, unless immediate medical attention is necessary to preserve the health or life of the child.

A male or female attains his or her majority in Kansas when reaching the age of 21 but, if married, they reach the age of majority at 18.

Consent is sometimes withheld by the parents on the ground that such treatment would be contrary to their religious beliefs or because of ignorance. Where the life or health of the child is in jeopardy, it is suggested that the physician or those interested in the child's welfare report the case to the county attorney or to any available child welfare agency, with a view of having them initiate immediate legal action. The Kansas statutes provide that, when the health or condition of a dependent and neglected child shall require it, the juvenile court may cause the child to be placed in a public or private hospital under the care of a competent physician.

Where the patient is of unsound mind and incompetent to understand the nature, the purpose, and the risks incident to a proposed operation, authority must come (a) if he is a minor, from one or both of his parents, unless a guardian has been appointed for him by the court, in which case it must come from the guardian; or (b) if he has attained his majority, from

his spouse or legally appointed guardian. An adult, not under guardianship, who is partially incompetent but sufficiently capable mentally of understanding his need for an operation and the possible consequences may be considered capable of assenting, especially in view of the fact that he is, despite his mental condition, considered in law to be capable of entering into a contract for medical services as a necessity of life. It is, nevertheless, desirable under such circumstances that a relative, or if there is none, some person who has demonstrated a genuine interest in his care and welfare, approve or join in executing the consent.

When an immediate operation is imperative and the patient is unable to consent rationally to the proposed operation, and when delay incident to the obtaining of the consent of some one legally authorized to consent on behalf of the patient involves serious risk to the patient, an operation may be performed on the legal theory of implied consent. The law implies that the patient would, if competent, consent to whatever may be necessary in his own interests. When a surgeon operates under such circumstances he should be prepared to show (a) that an immediate operation was necessary; (b) that a lawful express consent could not be obtained from the patient or from any person authorized to act for him, without endangering the health or life of the patient; and (c) that the operation performed was necessary for the patient's welfare.

Ordinarily, an operation must be performed strictly within the limits of the authority that has been given. The physician may not perform an operation different from that for which consent has been given. The operation must be performed in the manner which has been agreed upon. A consent must be obtained for each individual operation performed. A consent to one operation will not authorize another or later operation, even though the second operation is for the same condition as the first. Authority may be given, however, for the operating physician to use his own judgment within certain reasonable limitations. It is usually mutually desirable for the physician to request the patient to allow him a reasonable amount of discretion in the performance of an operation. The operating physician must do whatever may be reasonably necessary for the safety of the patient, even in the case of a limited operation. The ordinary legal implication is that, if the patient under anesthesia had known beforehand of the circumstances that make a modification or extension of the operation necessary, or if at the moment he could exercise rational judgment, he would give his consent. The law implies consent in those cases, since it is assumed that the patient would consent to that which is for his benefit. However, a physician may not, in the course of an authorized operation, perform a different operation or unauthorized supplementary surgery unless a true emergency exists. There must be a condition which, if not corrected, would be an imminent threat to life or could result in grave and irreparable injury to the health of the patient. It is not enough that the physician thinks that certain procedures will be beneficial to the patient.

The physician must also remember at all times that the patient's consent in no way relieves the physician of his duty to exercise due care in all that he does. Consent to the operation does not authorize any deviation from prevailing standards of care and caution.

An adult patient of sound mind, who knows that he can agree or refuse to submit to an operation, and who knows or has been fully and fairly informed by his physician as to what is to be done, and who then cooperates with the physician, has impliedly consented even though he has not consented in words. Such implied consent is customarily given in routine office practice. Implied consent to operations always involves the possibility of misunderstanding as to the purpose and scope of the undertaking and the difficulty of obtaining proof in the event of a controversy. The legal concept of implied consent usually permits a physician, in an emergency, to operate on or extend the scope of surgery on an unconscious or delirious person who is unable to make his own decision. This situation frequently arises in connection with serious accidents when the patient is unable to act for himself. If some one is present who has authority to act for the patient or if, without jeopardizing the welfare of the patient, such a person can be communicated with before operating, his consent should be obtained.

Oral consent to an operation is usually supplemented by implied consent. For instance, a patient, after orally consenting to an operation, cooperates with the physician in its performance. Oral consent, like implied consent, is open to misunderstanding and may be difficult of proof.

Written consent to an operation, although not required by law, is most desirable in order to avoid the misunderstandings that lead to lawsuits, and also to facilitate proof when necessary. The prudent physician will demand a written consent or authorization with respect to any operation which involves an element of recognized danger to the patient or which requires hospitalization.

No particular form is necessary to give validity to a written consent. The essential requirements are that it state clearly the nature and extent of the operation authorized and that it be signed by a person legally qualified to give consent. The authorization should state who is to be responsible for the administering of the anesthetic and the postoperative care of the patient if these services are to be performed by a physician other than the operating surgeon. The inclusion

of the place and date of execution and the signature of a witness are desirable, but only because they tend to facilitate proof. Generally speaking, the more vague and indefinite the terms of the consent, the more specifically it will be construed by the court. Care should be taken to spell out precisely and in the least technical language possible the exact procedure which the physician intends to perform or the particular condition which he seeks to relieve.

Authorizations and consents in Kansas should be preserved at least for two years after the operation and longer, if possible. If the patient is a minor or incompetent, the consent should be retained indefinitely and, in the case of a minor, until he becomes 21 years of age and one year thereafter.

If a physician requests a written consent to surgery from the patient at the time the arrangements for surgery are made, the patient will be inclined to inquire as to his condition, the nature of the procedure contemplated, and the attendant risks. Under these conditions there can be no allegation by the patient later that he was under sedation when he signed the consent form, or that a hospital attendant had stated that the signing of the consent form was a "mere formality." The patient is entitled to an explanation from the physician instead of from a hospital attendant who may be entirely unacquainted with the patient's condition. Legally, the physician may rely for his authority upon a consent obtained by the hospital for his benefit, but it is readily apparent that the physician may protect himself best by attending to the details of having the consent form completed, signed, and witnessed in his presence. The use of business methods in dealing with this phase of medicine may reduce the liability claims that arise from misunderstandings, from the use of poorly drawn or antiquated medioclegal forms, or failure to use any written forms.

A discussion of fees prior to the rendering of services and at the time the consent is given is also important.

No general written consent form would be applicable to the many types of surgical operations performed. However, the secretary's office would be glad to furnish specific forms which, in the opinion of the attorney for the Society, would give the member proper protection.

Psychiatric Association Meeting

The annual meeting of the Mid-Continent Psychiatric Association will be held at the Lassen Hotel, Wichita, September 12-14, according to announcement made recently by Dr. Austin J. Adams, Wichita, president.

The organization's "Early Bird" party will be held the evening of September 12, with the scientific program beginning the morning of September 13. Dr. Robert W. Hyde, Providence, Rhode Island, and Dr. Robert Menninger, Topeka, will discuss "The Therapeutic Community," after which a panel discussion will be presented by Dr. James Galvin, Dr. Frank Adelman, Dr. Granville Jones, Dr. James Haddock, Dr. George Jackson, and Dr. Knostantin Geocaris.

The subject for the Sunday program is "Psychopharmacology" with Dr. L. J. West of the University of Oklahoma, Dr. Arnold Schneibel of the University of California, and Dr. Jackson Smith of the University of Nebraska as participants. The panel discussion which follows will include four additional speakers, Dr. Paul Feldman, Dr. Harold Meyers, Dr. Milford Ungerman, and Dr. Leopold Hofstatter.

Institute on Schizophrenia

An institute on chronic schizophrenia and hospital treatment programs will be held at the Osawatomie State Hospital, Osawatomie, October 1-3, under the sponsorship of the hospital and the Menninger Foundation and supported by the National Institute of Mental Health and Smith, Kline and French Laboratories. Its purpose is to derive specific practical treatment for mental hospitals from theoretical premises, to clarify divergent points of view, and to promote new ideas in research. The meeting will be national in scope.

No registration fee will be charged, but attendance will be limited. Those interested in attending are asked to write Dr. George Zubowicz, superintendent of the hospital.

Eye Tests Recommended

Children who begin the first, fourth, and ninth grades in September will receive tests of visual acuity if recommendations made by the Committee on Conservation of Eyesight and approved by the House of Delegates of the Kansas Medical Society are carried out. The recommendation suggested that an illiterate Snellen type test chart be used for first graders and a standard Snellen test chart for older children.

The examination is simple enough that school teachers and nurses can properly administer it. Children having substantially reduced visual acuity can be referred to their physicians immediately.

Other types of visual testing on a routine basis were discouraged by the committee.

More than 95 per cent of vehicles involved in fatal accidents on United States highways in 1957 were in apparently good condition.

American Medical Association Meeting

A variety of subjects occupied the attention of members of the House of Delegates of the American Medical Association at the organization's 107th annual meeting in San Francisco, June 23-27. Nothing discussed was of unusual importance to the Kansas delegates, but most items on the agenda carry sufficient interest to merit reporting.

The following items are included for the information of Kansas physicians:

United Mine Workers—Major discussion of relations between medicine and the UMWA Welfare and Retirement Fund centered on a reference committee report which concurred in a Board of Trustees opinion that final action on two resolutions adopted in December, 1957, should be postponed until the final report of the Commission on Medical Care Plans is received.

One of those resolutions declared that "a broad educational program be instituted at once by the American Medical Association to inform the general public, including the beneficiaries of the Fund, concerning the benefits to be derived from preservation of the American right to freedom of choice of physicians and hospitals as well as observance of the 'Guides to Relationships Between State and County Medical Societies and the UMWA Welfare and Retirement Fund' adopted by this House last June." The other resolution called for the appropriate A.M.A. committee or council to engage in conferences with third parties to develop general principles and policies which may be applied to their relationships with members of the medical profession.

In explaining its position that final action on the two resolutions should be taken only after proper study, the reference committee said it "anticipates that the final report of the Commission on Medical Care Plans will contain recommendations serving to clarify the relationships between the medical profession, the patient, and third parties, and the committee has been assured that this can be expected." The committee also urged the Commission to present its recommendations no later than December, 1958.

The House of Delegates, however, by a vote of 110 to 72, adopted a floor amendment "that this section of the Reference Committee report be amended to show that our A.M.A. Headquarters Staff is directed, under supervision of the Board of Trustees, to proceed *immediately* with the campaign which was originally ordered at Philadelphia last December, that no further delays will be tolerated, and that the Council on Medical Service be relieved of any further responsibility in this matter."

Social Security Coverage—In considering seven resolutions dealing with the inclusion of self-employed physicians under the Social Security Act, the House disapproved of three which called for polls or a referendum of the A.M.A. membership, one which favored state-by-state participation in Social Security, and two which called for compulsory inclusion on a national basis. Instead, the House adopted a resolution pointing out that "American physicians always have stood on the principle of security through personal initiative," and reaffirming unequivocal opposition to the compulsory inclusion of self-employed physicians in the Social Security system.

On the question of polls, the House expressed the opinion that any poll should be taken on a state-by-state basis and the results transmitted to the A.M.A. delegates from that state. It also pointed out that since there is no provision in the Constitution and Bylaws for a referendum of members, such a referendum would usurp the duties and prerogatives of the House of Delegates, which is the Association's policy-making body.

Voluntary Health Organizations—Dealing with problems that have arisen in raising and distributing funds since development of the concept of united community effort, the House adopted the following statement offered in the form of amendments from the floor: (1) That the House of Delegates reiterate its commendation and approval of the principal voluntary health agencies; (2) That it is the firm belief of the American Medical Association that these agencies should be free to conduct their own programs of research, public and professional education, and fund raising in their particular spheres of interest; (3) That the House of Delegates respectfully requests that the American Medical Research Foundation take no action which would endanger the constructive activities of the national voluntary health agencies; and (4) That the Board of Trustees continue actively its studies of these perplexing problems looking forward to their ultimate solution.

Veterans' Medical Care—Pointing out that the federal government spent $619,614,000 on hospitalized medical care of veterans in VA hospitals in 1957, of which about 75 per cent had non-service-connected disabilities, and that ways and means of obtaining economy in federal government are allegedly being sought by Congress at this time, the House urged Congressional action to restrict hospitalization of veterans at VA hospitals to those with service-connected disabilities. It also recommended that the American Medical Association suggest to the Dean's Committees that they restrict their activities to Veterans Administration hospitals admitting only patients with service-connected disabilities.

The Medicare Program—In disapproving a resolution calling for repeal, modification, or amendment

of Public Law 569, the House took the position that desired changes in the Medicare program could be accomplished through modification of the present implementing directives without the necessity for new legislation. The House reaffirmed the action taken last year in New York recommending that the decision on type of contract and whether or not a fee schedule is included in future contract negotiations should be left to individual state determination. Also reaffirmed was the contention that the Dependent Medical Care Act as enacted by Congress does not require fixed fee schedules; the establishment of such schedules would be more expensive than permitting physicians to charge their normal fees, and fixed fee schedules would ultimately disrupt the economics of medical practice.

Washington Office—The House adopted a resolution requesting the Board of Trustees to make an immediate survey and re-evaluation of "the functions and effectiveness of the over-all A.M.A. legislative system, including the Washington office, in the light of present-day needs of the government, public and medical profession alike for effective liaison between government and medicine on all matters affecting the public's health and adequate, prompt and accurate transmittal to the full membership of the A.M.A. of information on all current public issues in which the physician has a direct interest." The House asked that the Board of Trustees implement, as rapidly as possible, all changes and additions that its survey discloses are desirable to achieve the basic purpose of the resolution, "effective public and government relations."

Medical Aspects of Hypnosis—A Council on Mental Health report on "Medical Use of Hypnosis" was approved by the House, which recommended that it be published in the *Journal of the American Medical Association* with bibliography attached. The report stated that general practitioners, medical specialists, and dentists might find hypnosis valuable as a therapeutic adjunct within the specific field of their professional competence. It stressed, however, that all those who use hypnosis need to be aware of the complex nature of the phenomena involved. Teaching related to hypnosis should be under responsible medical or dental direction, the report emphasized, and should include the indications and limitations for its use. The report urged physicians and dentists to participate in high level research on hypnosis, and it vigorously condemned the use of hypnosis for entertainment purposes.

Over-the-Counter Medications—The House endorsed recommendations by the Public Relations Department that:

The A.M.A. join with other interested groups in setting up an expanded voluntary program, coordinated by the National Better Business Bureau, which will seek to eliminate objectionable advertising of over-the-counter medicines.

The A.M.A. counsel with the National Better Business Bureau in the selection of a physicians' advisory committee.

The established facilities of the A.M.A., such as the Chemical Laboratory, the offices of the various scientific councils, and the Bureau of Investigation, be made available, so far as is feasible, to aid in the carrying out of this program.

The Public Relations Department continue its liaison work with the various groups involved and assist in the development and operation of this program in any way possible.

The A.M.A. become a sustaining member of the National Better Business Bureau, giving evidence of its willingness and desire to support this organization in its worthwhile activities.

Miscellaneous—The House approved "Suggested Guides for the Organization and Operation of Medical Society Committees on Aging" submitted by the Council on Medical Service.

The House also requested that any funds provided under the Public Assistance provisions of the Social Security Act for medical care of the indigent be administered by a voluntary agency such as Blue Shield on a cost plus basis or by a specific agency established by the medical society of the state in which indigent care is rendered.

In a study of problems pertaining to licensure by reciprocity, the House directed that the Board of Trustees consult with the Federation of State Medical Boards in an attempt to find a satisfactory solution.

In another action it urged all members of the House of Delegates to give full consideration to the preliminary report of the Committee on Preparation for General Practice and to submit comments and suggestions to that committee.

A point of special interest to the Kansas delegates was the fact that the House approved an interprofessional code for physicians and attorneys. Kansas, at its Society meeting in May, approved a similar code for this state.

At the opening session Dr. David B. Allman, retiring president, urged every physician to rededicate himself to the service of mankind and every medical society to strengthen its disciplinary system "to prevent the very few from besmirching the vast majority of us."

Dr. Gunnar Gundersen, who took office as president, called upon the medical profession to accept

its full responsibilities in promoting better world health, brotherhood, and peace, adding that "the time has come when medical statesmanship must be used to augment the methods of political diplomacy."

Dr. Louis M. Orr, urologist of Orlando, Florida, was named president-elect for the coming year. Dr. W. Linwood Ball, Richmond, Virginia, is vice-president. Dr. E. Vincent Askey, Los Angeles, was re-elected speaker of the House.

The 1960 meeting of the association will be held in Miami Beach, and the 1961 session will be in New York City.

George F. Gsell, M.D., Delegate
Lucien R. Pyle, M.D., Delegate

BOOK REVIEWS

Aids to Medical Diagnosis. Eighth Edition. By G. E. Frederick Sutton, M.D. Published by Williams and Wilkins Company, Baltimore. 399 pages. Price $3.50.

The British have a facility for brevity and clarity in scientific writing which is unfortunately rare in writers on this side of the Atlantic. Who would expect to find an American book which is small enough to fit into one's hip pocket and yet which contains a vast amount of detailed information on differential diagnosis? Dr. Sutton's book is a volume in the Students' Aids Series which might seem to remove it from consideration for use by practicing physicians, but we in Kansas have, by a large majority, adopted the philosophy that physicians remain students for 40 years—not four. So it is quite logical to assume that a book of this series might be of some use to practitioners.

It is in reality a compact book of differential diagnosis, not simply a collection of "aids" to medical diagnosis, but it is not—nor does it pretend to be—encyclopedic. While it will frequently be necessary to search for specific bits of information in other works, one can hardly fail to benefit by studying this small book and by referring to it frequently, and its small size and low price should make it a favorite for this purpose.

In contrast to the superior nature of the textual material, the printing and binding are somewhat primitive by American standards, and the few illustrations of electrocardiographic tracings and roentgenograms serve rather to convey the author's idea than to give an accurate impression of the appearance of the originals.—*J.D.R.*

Dietary Prevention and Treatment of Heart Disease. By John W. Gofman, M.D., Alex V. Nichols, Ph.D., and E. Virginia Dobbin, Dietitian. Published by G. P. Putnam's Sons, New York City. 256 pages. Price $3.95.

This book represents a rather comprehensive approach to the title subject by Dr. Gofman and his associates. The first 60 pages of the book are devoted to a review of the nature of coronary heart disease and the importance of dietary components in the etiology of coronary heart disease. This is written in lay terms and is a good review of the basic problem. The entire subject is treated in a simplified manner which makes it suitable for lay interpretation.

The discussion of saturated and unsaturated fats, hydrogenated and unhydrogenated fats is a good résumé of the subject for the non-medical person. The authors take sharp issue with certain popular concepts regarding the value and importance of unsaturated vegetable fats in the diet. The primary criticism of this portion of the book is the unusual emphasis which is put upon the rather technical aspects of ultra centrifugal studies. This is probably not necessary in a book of this type but reflects the authors' long interest in this field.

There is an excellent chapter on dietary evaluation for the patient. This and chapters on the use of vegetable oils in the diet and carbohydrate substitution with numerous recipes constitute the remainder of the book.

The book is well written and, for one interested in this subject, provides a concise and valuable source of information.—*J.E.C.*

Clinical Enzymology. Edited by Gustav J. Martin, Sc.D. Published by Little, Brown and Company, Boston. 241 pages. Price $6.00.

This book will not be of much use to the average practicing physician. It consists of seven chapters, each one of which is an essay dealing with a different phase of enzymology. Three chapters entitled Protein Biology, Polymerases in Biology, and Recapitulation and Perspectives for Clinical Enzymology were written by the editor, Gustav Martin. The remaining four chapters entitled Chemistry of Enzymes Used Clinically, Biochemistry of Enzymes Used Clinically, Parenteral Use of Enzymes in Medicine, and Diagnostic Uses of Enzymes were written by several others. As a result this book is more a series of disjointed essays than one of smooth continuity.

The chapters on biology and chemistry of enzymes are of necessity brief and to the point. But they are still detailed enough to provide difficult reading for the average physician. These chapters are written in a sketchy fashion, and the reader often wishes for

more details so that he can be sure of understanding what he is reading.

The chapters on the actual clinical application of enzymology are regrettable in that one gets the impression that the authors (only one is an M.D.) have had little to do with the actual care of patients. These chapters are essentially a brief review of the clinical literature. The whole host of enzymes in the blood that are of clinical use is reviewed as well as the various enzymes that are administered parenterally for therapeutic effect. There is very little in this volume on the various enzymes which are of theoretical interest in the metabolism of the body, the clinical measurement of which has no practical value in treating patients.

This is the type of book that will not find its way to many physicians' own libraries, but will be a well used reference in an academic medical center. One of the most valuable features of this volume is the extensive bibliography at the end of each chapter. Anyone wanting detailed information on a phase of clinical enzymology will find this book too brief, but the bibliography will be useful in referring the reader to more detailed writings.—*W.G.C.*

ANNOUNCEMENTS

Annual meeting, Colorado State Medical Society, Broadmoor Hotel, Colorado Springs, September 24-27. General sessions, sectional meetings, more than 100 scientific presentations. Write Colorado State Medical Society, 835 Republic Building, Denver 2, Colorado.

Fifteenth annual meeting, American Medical Writers' Association, Hotel Morrison, Chicago, September 26-27, following 23rd annual meeting of Mississippi Valley Medical Soicety at the same hotel, September 24-26. For information on either session, write Harold Swanberg, M.D., 209-224 W.C.U. Building, Quincy, Illinois.

Two courses in obstetrics for general practitioners, offered by Woman's Hospital, New York City, October 16-30. One is "Ante-partum Care" and the other is "The Conduct of Labor." Information available from Mr. Carl P. Wright, Jr., Woman's Hospital, 141 West 109th Street, New York 25, New York.

Sectional meetings of International College of Surgeons: Billings, Montana, September 10; Chattanooga, Tennessee, September 29; Mobile, Alabama, October 3-4. Write College, 1516 Lake Shore Drive, Chicago 10, Illinois.

Fourth annual meeting, American Rhinologic Society, Palmer House, Chicago, October 17-18. No registration fee. Write Dr. Robert M. Hansen, 1735 North Wheeler Avenue, Portland 17, Oregon.

Second Oklahoma Colloquy on Advances in Medicine, devoted to arthritis and related disorders, November 12-15, sponsored by Oklahoma Medical Center, Geigy Pharmaceuticals, Wyeth Laboratories, Upjohn Company, Pfizer Laboratories, Schering Corporation, and Oklahoma Chapter, Arthritis and Rheumatism Foundation. Registration fee of $25. Missouri-Oklahoma football game at Norman on final day of meeting. Write Office of Postgraduate Education, University of Oklahoma School of Medicine, 801 Northeast 13th Street, Oklahoma City.

A symposium on infectious diseases will be held at Battenfeld Auditorium, University of Kansas Medical Center, Kansas City, September 19, under joint auspices of the American Academy of General Practice, the medical school, and Lederle Laboratories. Speakers from six medical schools will participate. Subjects will be staphylococcal infections and their control and treatment, new therapeutic agents, and perplexing disorders. There will be opportunity for questions and answers. Dr. Robert Weber, of the University of Kansas, will be one of the speakers.

Postgraduate course on orthopedic surgery and fractures, September 29, University of Oklahoma School of Medicine, Oklahoma City, preceding meeting of American Fracture Association, September 30-October 2. Seven hours credit by AAGP. Write Office of Postgraduate Education, 801 Northeast 13th Street, Oklahoma City.

Specialty meetings for practicing physicians, Oklahoma City, October 3 and 4, timed to coincide with Oregon-Oklahoma football game. Write Office of Postgraduate Education, 801 Northeast 13th Street, Oklahoma City.

CLASSIFIED ADVERTISEMENTS

WANTED—PEDIATRICIAN to join clinic in central Kansas town of 40,000. New modern clinic building. Everything furnished except automobile. Your opportunity to become partner in one of the oldest medical partnerships in Kansas. Guaranteed income $15,000 first year. Write the JOURNAL 10-58.

OPENINGS FOR PEDIATRICIAN AND UROLOGIST—College town of 11,000 in central Kansas. Open salary for six months, then full partnership possibility. Write the JOURNAL 11-58.

when psychic symptoms distort the picture

Dartal helps the patient reintegrate his mental processes

In everyday office practice as well as under hospital conditions Dartal is consistent in its effects as few tranquilizers are.

Dartal promotes emotional balance

Dartal effectively decreases or relieves emotional hyperactivity and psychomotor excitement.

Dartal is unusually safe

At a recent symposium, leading hepatologists* concluded that Dartal is not icterogenic or hepatotoxic.

Dartal is effective at low dosage

One 2-mg. tablet q.i.d. or one 5-mg. tablet t.i.d. in neuroses; one 10-mg. tablet t.i.d. in psychoses.

a superior psychochemical
for the management of both major and minor emotional disturbances

Dartal®

dihydrochloride brand of thiopropazate dihydrochloride

SEARLE

*A Symposium on the Pharmacologic Effects of Dartal on the Liver, Chicago, Searle Research Laboratories, Feb. 7, 1958.

Low Dosage KYNEX* for G.U. Infections

Sulfamethoxypyridazine Lederle

Unusual Antibacterial and Anti-infective Properties—More soluble in acid urine[1] . . . higher and better sustained plasma levels than any other known and useful antibacterial sulfonamide.[2]

Unprecedented Low Dosage—Less sulfa for the kidney to cope with . . . yet fully effective. A single daily dose of 0.5 to 1.0 Gm. maintains higher plasma levels than 4 to 6 Gm. daily of other sulfonamides—a notable asset in prolonged therapy.[2]

Dosage: The recommended adult dose is 1 Gm. (2 tablets) the first day, followed by 0.5 Gm. (1 tablet) every day thereafter, or 1 Gm. every other day for mild to moderate infections. In severe infections where prompt, high blood levels are indicated, the initial dose should be 2 Gm. followed by 0.5 Gm. every 24 hours.

KYNEX—WHEREVER SULFA THERAPY IS INDICATED

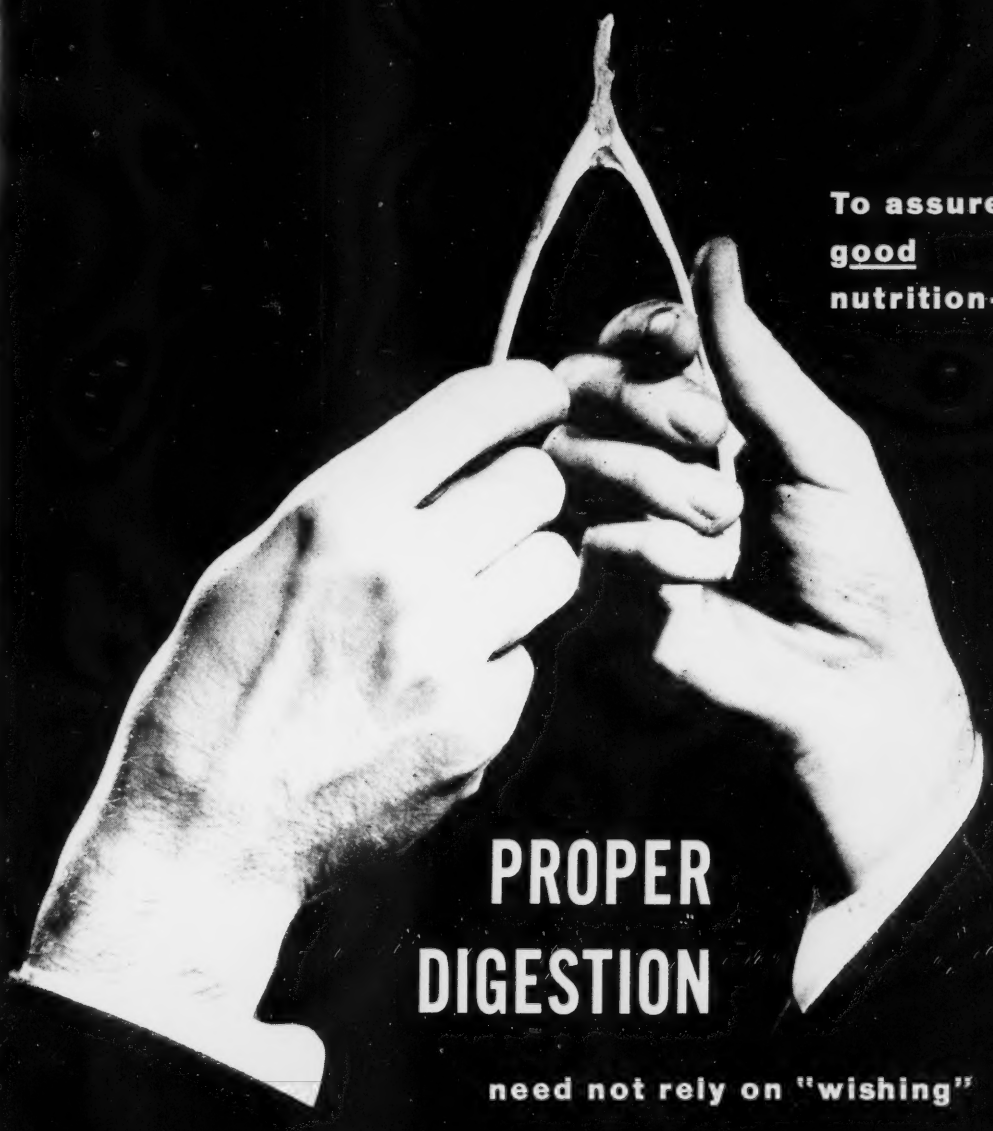
Tablets: Each tablet contains 0.5 Gm. (7½ grains) of sulfamethoxypyridazine. Bottles of 24 and 100 tablets.

Syrup: Each teaspoonful (5 cc.) of caramel-flavored syrup contains 250 mg. of sulfamethoxypyridazine. Bottle of 4 fl. oz.

references:
1 Grieble, H.G., and Jackson, G.G.: Prolonged Treatment of Urinary-Tract Infections with Sulfamethoxypyridazine. *New England J. Med.* 258:1-7, 1958
2. Editorial: *New England J. Med.* 258:48-49, 1958.

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

*Reg. U. S. Pat. Off.



To assure good nutrition—

PROPER DIGESTION

need not rely on "wishing"

Each double-layered Entozyme tablet contains:

Pepsin, N.F. ..... 250 mg.
—released in the stomach from gastric-soluble outer coating of tablet.

Pancreatin, U.S.P. ..... 300 mg.

Bile Salts ..... 150 mg.
—released in the small intestine from enteric-coated inner core.

A. H. ROBINS CO., INC.
Richmond 20, Virginia
Ethical Pharmaceuticals of Merit since 1878

As a comprehensive supplement to deficient natural secretion of digestive enzymes, particularly in older patients, ENTOZYME effectively improves nutrition by bridging the gap between adequate ingestion and proper digestion. Among patients of all ages, it has proved helpful in chronic cholecystitis, post-cholecystectomy syndrome, subtotal gastrectomy, pancreatitis, dyspepsia, food intolerance, flatulence, nausea and chronic nutritional disturbances.

For comprehensive digestive enzyme replacement—

ENTOZYME®

Robins

IN ALCOHOLISM

A "SECOND BEST" ARMY FAILS TOTALLY

And against the main army of alcoholics—those whose drinking is a symptom of underlying pathology—less than a complete campaign is futile.

To shorten time, frustration and expense (simple efficient management) requires initial institutional care of these individuals:

1. To stop their ingestion of alcohol;
2. To detoxify the system;
3. To restore the fluid electrolyte balance;
4. To detect and correct nutritional anomalies peculiar to the individual alcoholic;
5. To overcome or reduce bodily ailments that contribute to the abnormal state and, finally
6. **To develop a program that will aid the particular individual in abstaining from all alcoholic beverages until death.**

THE RALPH CLINIC

529 HIGHLAND AVENUE • KANSAS CITY 6, MISSOURI

Telephone VI. 2-3622

The Ralph Clinic (in its 61st year) is in the advance of every phase of the treatment of alcoholism. It invites consultation with you concerning your patients with problems of excessive drinking.

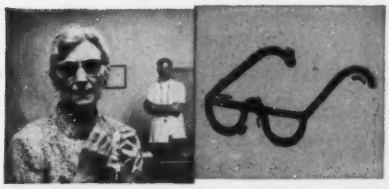
(A portfolio about the Problem of Alcoholism is available upon request).

in each of these indications for a tranquilizer...

SR is a cardiac patient. His doctor put him on ATARAX because (+) it is an anti-arrhythmic and non-hypotensive tranquilizer.

Other tranquilizers added to PN's g. i. discomfort (he has ulcers). But now his doctor has him on ATARAX because (+) it lowers gastric secretion while it tranquilizes.

Asthmatic JL used to have frequent tantrums followed by acute bronchospasm. Her family doctor tranquilized her with ATARAX because (+) it is safe, even for children.



Senile anxiety and persecution complex dogged Mrs. K. until her doctor prescribed ATARAX Syrup. (+) It tastes good, and it's a perfect vehicle for Mrs. K's tonic.

Dosage: Children, 1-2 *10 mg.* tablets or 1-2 tsp. Syrup t.i.d. Adults, one *25 mg.* tablet or 1 tbsp. Syrup q.i.d.

Supplied: 10, 25 and 100 mg. tablets, bottles of 100. Syrup, pint bottles. Parenteral Solution, 10 cc. multiple-dose vials.

...ATARAX® gives you an extra benefit

(HCl SALT OF HYDROXYZINE)

PFIZER Rx

New York 17, New York
Division, Chas. Pfizer
& Co., Inc.

Prompt 4 way check of diarrhea

- Curbs excessive peristalsis
- Adsorbs toxins and gases
- Soothes inflamed mucosa
- Provides intestinal antisepsis

POMALIN

TRADEMARK

Liquid

EFFECTIVE ANTIDIARRHEAL

FORMULA: *Each 15 cc. (tablespoon) contains:*

Sulfaguanidine	2 Gm.
Pectin	225 mg.
Kaolin	3 Gm.
Opium tincture	0.08 cc.
(equivalent to 2 cc. paregoric)	

DOSAGE: **Adults:** Initially 1 or 2 tablespoons from four to six times daily, or 1 or 2 teaspoons after each loose bowel movement; reduce dosage as diarrhea subsides.

Children: ½ teaspoon (=2.5 cc.) per 15 lb. of body weight every four hours day and night until stools are reduced to five daily, then every eight hours for three days.

SUPPLIED: *Bottles of 16 fl. oz.*
Exempt Narcotic. Available on Prescription Only.

Winthrop LABORATORIES
New York 18, N. Y.

NOW...A NEW TREATMENT

'CARDILATE'*

for THE PROPHYLAXIS OF ANGINA PECTORIS

'Cardilate' tablets shaped for easy retention in the buccal pouch

"... the degree of increase in exercise tolerance which sublingual erythrol tetranitrate permits, approximates that of nitroglycerin, amyl nitrite and octyl nitrite more closely than does any other of the approximately 100 preparations tested to date in this laboratory."

"Furthermore, the duration of this beneficial action is prolonged sufficiently to make this method of treatment of practical clinical value."

Riseman, J. E. F., Altman, G. E., and Koretsky, S.: Nitroglycerin and Other Nitrites in the Treatment of Angina Pectoris, Circulation (Jan.) 1958.

* 'Cardilate' brand Erythrol Tetranitrate SUBLINGUAL TABLETS, 15 mg. scored

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

For Real Pain ...give real relief:

A.P.C. WITH Demerol® tablets

Each tablet contains:

Aspirin	200 mg.	(3 grains)
Phenacetin	150 mg.	(2½ grains)
Caffeine	30 mg.	(½ grain)
Demerol hydrochloride	30 mg.	(½ grain)

Average Dose:

1 or 2 tablets.

Narcotic blank required.

Potentiated Pain Relief

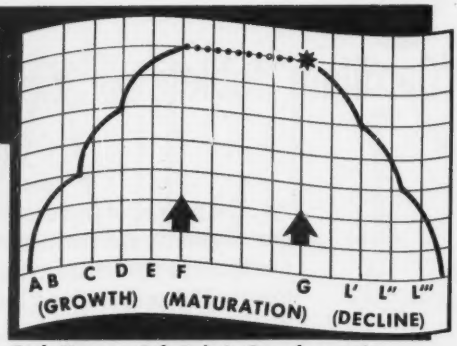
WINTHROP LABORATORIES

New York 18, N. Y. • Windsor, Ont.

Demerol (brand of meperidine), trademark reg. U.S. Pat. Off.

...to postpone the "G" point*...

℞.....Geritag



For patients over 40, The G POINT (point of declination in life) can be postponed!

Properly balanced Androgen — Estrogen — nutritional therapy may prevent premature aging and damage of gonadal decline and nutritional inadequacy.

Complaints of symptoms such as muscular pain, fatigue, irritability, and poor appetite in the patient over 40 may be the first indications of three major stress factors in the aging process: (1) Gonadal Hormonal Imbalance, (2) Nutritional Inadequacy and (3) Emotional Instability. GERITAG is especially formulated to guard against premature damage and to delay the degenerative process.

Rx GERITAG in preventive geriatrics.

Each Magenta Soft Gelatin Capsule contains:

Methyltestosterone	2 mg.	Thiamine Hcl.	2 mg.
Ethinyl Estradiol	0.01 mg.	Riboflavin	2 mg.
Ferrous Sulfate	50 mg.	Pyridoxine Hcl.	0.3 mg.
Rutin	10 mg.	Niacinamide	20 mg.
Ascorbic Acid	30 mg.	Manganese	1 mg.
B-12	1 mcg.	Magnesium	5 mg.
Molybdenum	0.5 mg.	Iodine	0.15 mg.
Cobalt	0.1 mg.	Potassium	2 mg.
Copper	0.2 mg.	Zinc	1 mg.
Vitamin A	5,000 I.U.	Choline Bitartrate	40 mg.
Vitamin D	400 I.U.	Methionine	20 mg.
Vitamin E	1 I.U.	Inositol	20 mg.
Cal. Pantothenate	3 mg.		

Also available as injectable.

*Chappel, C.C., J.A.M.A., 162: 1414, (Dec. 8) 1956

Write for Latest Technical Bulletins.

TUTAG

S. J. TUTAG & COMPANY

DETROIT 34, MICHIGAN

HE NEEDN'T BE HIGH-STRUNG

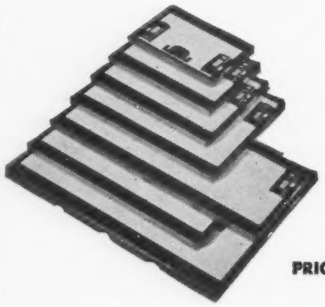
WEIGHT REDUCTION: Obese patients may resist dieting because they fear losing the emotional security often involved in overeating. AMBAR helps them hold the diet line by giving them a more alert, brighter outlook. WITHOUT JITTERS: Methamphetamine, a potent CNS augmenter, produces less cardiovascular effect than amphetamine. In AMBAR it is combined with just enough phenobarbital to prevent overstimulation. AMBAR EXTENTABS provide 10-12 hours of appetite suppression in one controlled-release, extended-action tablet: methamphetamine hydrochloride, 10.0 mg.; phenobarbital (1 gr.) 64.8 mg. AMBAR TABLETS for conventional dosage or intermittent therapy contain methamphetamine hydrochloride, 3.33 mg.; phenobarbital (⅓ gr.) 21.6 mg. A. H. ROBINS COMPANY, INC., Richmond, Virginia, Ethical Pharmaceuticals of Merit Since 1878

WEIGHT REDUCTION WITHOUT JITTERS AMBAR™ Robins

methamphetamine and phenobarbital
TABLETS AND EXTENTABS®

Now available
NEW AMBAR #2
EXTENTABS
(METHAMPHETAMINE 15 mg., PHENOBARBITAL 1 gr.)
for patients who
require higher
methamphetamine
dosage

G-E molded cassettes cost less— last far longer!



Molded-rubber frame cushions jolts, keeps front and back of cassette in *true alignment*. Built-in glass-fiber pad gently squeezes screens and film for uniform contact always. "Slide-easy" latches release at light finger pressure, resist accidental opening. Molded-rubber seal prevents entry of light. Exclusive rubber hinge — thoroughly proved in ½-million flexings that left it *bonded as firmly as at time of manufacture!*

PRICES: 5x7—**$14.00** 6½x 8½—**$16.50** 8x10—**$18.00** 11x14—**$23.25** 7x17—**$23.50** 10x12—**$20.00** 14x17—**$25.25**

Your one-stop direct source for the

FINEST IN X-RAY
apparatus . . . service . . . supplies

DIRECT FACTORY BRANCH
KANSAS CITY, MO.
112 W. 19th St. • VIctor 2-1080

RESIDENT REPRESENTATIVES
TOPEKA
J. W. HELLER
710 Pk. Lane • Phone 6324
WICHITA
F. C. LISCUM
2418 Wilma • Phone 7-1053

and inflammation
with **BUFFERIN®**
IN ARTHRITIS

salicylate benefits with minimal salicylate drawbacks

Rapid and prolonged relief—with less intolerance. The analgesic and specific anti-inflammatory action of BUFFERIN helps reduce pain and joint edema—comfortably. BUFFERIN caused no gastric distress in 70 per cent of hospitalized arthritics with proved intolerance to aspirin. (Arthritics are at least 3 to 10 times as intolerant to straight aspirin as the general population.[1])

No sodium accumulation. Because BUFFERIN is sodium free, massive dosage for prolonged periods will not cause sodium accumulation or edema, even in cardiovascular cases.

Each *sodium-free* BUFFERIN tablet contains acetylsalicylic acid, 5 grains, and the antacids magnesium carbonate and aluminum glycinate.

Reference: 1. J.A.M.A. 158:386 (June 4) 1955.

ANOTHER FINE PRODUCT OF BRISTOL-MYERS

Bristol-Myers Company
19 West 50 St., New York 20, N. Y

9, April 1956. 179. Friedman, A. P.: The treatment of chronic headache with mepro- Use of tranquilizers in the treatment of headache. Am. Pract. & Digest Treat. 8:94, .M.A. 163:1111, March 30, 1957. 182. Friedman, H. T. and Marmelzat, W. L.: Adverse robamate [Miltown] - a clinical study. Am. J. Psychiat. In press, 1957. 184. Gibbs, Relaxant effects of meprobamate in disabilities resulting from musculoskeletal and 453, July 1956. 186. Gillette, H. E.: The effect of meprobamate on cerebral palsy. ers and purpura hemorrhagica (Correspondence). J.A.M.A. 161:96, May 5, 1956. 188. An evaluation of meprobamate in the treatment of alcoholism. Ann. New York Acad. Sc. "Habit-forming" individuals (Queries and Minor Notes). J.A.M.A. 163:515, Feb. 9, e. Ohio M. J. 52:1306, Dec. 1956. 192. Hollister, L. E., Elkins, H., Hiler, E. C. ad. Sc. 67:789, May 9, 1957. 193. Hollister, L. E., Stannard, A. N. and Drake, C. F.: 194. Holoubek, J. E., Thomas, O. C. and Sc[illegible], J.: Toxic reaction to 2-methyl- 95. Karli[illegible], W. A. [illegible] (Correspondence). Canad. robamate (M[illegible]) [illegible] Eye, Ear, Nose & Throat. tranquilizer, meprobamate -- Its use for pain associated with cancer, preliminary obamate (Correspondence). J.A.M.A. 161:644, June 16, 1956. 19[illegible]. Kugelmass, I. N. . P. Clinic[illegible] 1956. [illegible] Lamphier, T. [illegible] addition (Correspond- obamate in [illegible] surgical [illegible]. Am. [illegible] Acad. [illegible] May 9, 1957. J. Chronic [illegible] 1956. [illegible] Lemere, F.: [illegible] drugs. North-). J.A.M.A. 160:1431, April 21, 1956. 205. Lemere, F.: Habit-forming properties of 56. 206. Lemere, F.: Promazine (Sparine) in the treatment of psychiatric disorders. A. Arch. Derm. & Syph. 74:437, March 1956. 207. LeVan, N. E., and Handy, C. F.: Un- LeVan, P. [illegible] Wright, E. T.: Use of tranquilizers in diseases of the skin -- A Clinical evaluation of meprobamate in disturbed and prepsychotic children. Ann. New .: Ineffectiveness of Diamox in the treatment of childhood epilepsy. Pediatrics 17: in treatment. Southwestern Med. 37:428, July 1956. 213. McGuire, R. R.: Drug reaction town in the treatment of chronically ill psychiatric out-patients. Pennsylvania M. J. ychiatric [illegible]. Washington, D. C., April 1956. 215. Minos, M. G., Boyd, blication, 1957. 217. Osmond, H. A.: Treatment of anxiety states with meprobamate Osinski, W. A.: Treatment of anxiety states with meprobamate. Ann. New York Acad. spondence). J.A.M.A. 163:489, Feb. 9, 1957. 220. Pelner, L.: Meprobamate (Correspond- of six ataraxics in neuropsychiatric patients. Read at the American Psychosomatic robamate, tranquilizing drug with muscle relaxant properties in psychotic cases, in 1957, pp. 125-131. 223. [illegible], V. M.: A comparative study of six ataraxics in on, V. M.: A two-year comparative study of ataraxics in neuropsychiatric patients. J. n (meprobamate) with psychotic patients. Am. J. Psychiat. 114:257, Sept. 1957. 226. 7. 227. Pennington, W. M.: Addition to meprobamate questioned (Correspondence). North- in convulsive and related disorders. J.A.M.A. 161:1040, July 14, 1956. 229. Pevey, J. with phenobarbital, meprobamate and two similar experimental agents. J. Pharmacol. & iltown) for the treatment of emotional disorders. Am. Pract. & Digest Treat. 7:1573, tion. North[illegible] 1953. [illegible] Meprobamate in anx- 956. 233. Rushia, E. L.: Preliminary report on the use of meprobamate for pre-anes- S. B.: The effects of ward tension on the quality and quantity of tranquilizer uti- The value of muscle [illegible] in disorders of muscle tone. Ann. New York Acad. Sc. Hypotensive [illegible] following treatment with meprobamate (Correspondence). Lancet 2: g drug: use [illegible] methyl-2-propyl-1,3-propanediol dicarbamate). J.A.M.A. new tranquilizing [illegible]. J. Clin. & Exper. Psychopath. 17:7, March 1956. 239. Sen- ode Island M. J. 43:6, Dec. 1956. 240. Shanahan, A. [illegible] Hirsch, S. Three cases O.: 'Mood' therapy in the aged. Differential approaches to recent therapy. M. Times P.: Meprobamate (Miltown) in rheumatic diseases. J.A.M.A. 162:952, Nov. 16, 1957. spasm due to [illegible] 1957. 244. eriatrics Soc. 5:152, Feb. 1957. 245. Smith, R. T.: The newer drugs in the treat- adelphia, March, 1957, pp. 353-358. 246. Sokoloff, O. J.: Meprobamate (Miltown) as , Oct. 1956. 247. Steffen, C. G., Chervin, M. and Van Vranken, B.: Reaction follow- Stewart, R. H.: The use of tranquilizing drugs in gynecology. West. J. Surg. 64: land J. Med. 256:354, Feb. 21, 1957. 250. Thal, N.: Premedication for electroshock 7:52, Feb. 1956. 251. Thimann, J.: Newer drugs in the treatment of acute alcoholism ng, Atlanta, Georgia, Dec. 28, 1955. 252. Thimann, J. and Gauthier, J. W.: Miltown 17:19, March 1956. 253. Tucker, W. I.: The place of Miltown in general practice. l evaluation of meprobamate therapy in a chronic schizophrenic population. Am. J. . Surg., Gynec. & Obst. 104:233, Feb. 1957. 256. Turvey, S. E. C.: Meprobamate for 63, June 1956. 257. van de Erve, J. and Childs, D. R.: Meprobamate reactions. J. cas (The new ataractic drugs). Prensa méd. argent. 43:2667, Aug. 31, 1956. 259. Wein-

proven effective
and unusually
well tolerated
in over 600
clinical studies

■ does not impair mental efficiency or physical performance ■ relieves both mental and muscular tension ■ does not affect autonomic function

Miltown®

meprobamate (Wallace)

WALLACE LABORATORIES ■ New Brunswick, New Jersey

PMB-200

"Premarin" with Meprobamate new potency

Each tablet contains 0.4 mg. "Premarin," 200 mg. meprobamate

For undue emotional stress in the menopause

WRITE SIMPLY...

Also available as PMB-400 (0.4 mg. "Premarin," 400 mg. meprobamate in each tablet).

Supply:
No. 880, PMB-200 bottles of 60 and 500.
No. 881, PMB-400 bottles of 60 and 500.

AYERST LABORATORIES • New York 16, New York • Montreal, Canada

Ayerst

"Premarin®" conjugated estrogens (equine) Meprobamate licensed under U.S. Pat. No. 2,724,720 5830

NEW ***"flavor-timed" dual-action***
CORONARY VASODILATOR

Dilcoron TRADEMARK

ORAL (tablet swallowed whole) *for dependable prophylaxis*
SUBLINGUAL-ORAL *for immediate and sustained relief*
of **ANGINA PECTORIS**

NITROGLYCERIN— 0.4 mg. (1/150 grain)—acts quickly

CITRUS "FLAVOR-TIMER"— signals patient when to swallow

PENTAERYTHRITOL TETRANITRATE— 15 mg. (1/4 grain)—prolongs action

For continuing prophylaxis patient swallows the entire Dilcoron tablet.
Average prophylactic dose: 1 tablet four times daily.
Therapeutic dose: 1 tablet held under the tongue until citrus flavor disappears, then swallowed.

Bottles of 100.

Winthrop LABORATORIES NEW YORK 18, N. Y.

BONADOXIN®

STOPS MORNING SICKNESS...BUT

...IT DOESN'T STOP THE PATIENT

BONADOXIN brings relief to 88.1% of patients...often within a few hours.[1,2] But it does not produce drowsiness, or side effects associated with over-potent antinauseants. With safe BONADOXIN, "toxicity and intolerance...[is] zero."[2]

Is she blue at breakfast? Prescribe BONADOXIN. Usually just one tablet at bedtime stops nausea and vomiting of pregnancy...

and just one supplies the full 50 mg. of pyridoxine. ⇐

EACH TABLET CONTAINS:
MECLIZINE HCl..... 25 mg.
PYRIDOXINE HCl..... 50 mg.

Bottles of 25 and 100.

...and for a nutritional buildup plus freedom from leg cramps*

STORCAVITE®

phosphate-free calcium, 10 essential vitamins, 8 important minerals. Bottles of 100.

*due to calcium-phosphorus imbalance

Rx PFIZER

NEW YORK 17, NEW YORK
Division, Chas. Pfizer & Co., Inc.

References: 1. Groskloss, H. H., et al: Clin. Med. 2:885 (Sept.) 1955. 2. Goldsmith, J. W.: Minnesota Med. 40:99 (Feb.) 1957.

Deformity Appliances of Quality

Orthopedic and Surgical Appliances

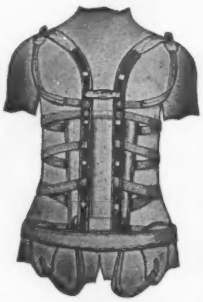
Artificial Limbs
Trusses

Abdominal Supports

Elastic Hosiery

Foot Supports

Surgical Corsets



Taylor Back Brace Made to Order in Our Own Factory

P. W. HANICKE MFG. CO.
1009 McGee St. VI 2-4750
KANSAS CITY, MO.

Service to Doctors of Medicine

General medical supplies

Surgical garment fitting department

Equipment repairs

Equipment rentals for patients

Munns Medical Supply Co.

Tenth & Horne
Topeka, Kans.

Telephone
5-5383

it's convenient to buy

OXYGEN THERAPY EQUIPMENT

FOR THE OUT PATIENT

ALL THE NECESSARY EQUIPMENT — REGULATORS, HUMIDIFIERS, FLOWMETERS, CATHETERS, MASKS, CANNULAS — INCLUDING HIGH PURITY OXYGEN FOR THE TREATMENT OF THE OUT PATIENT.

RENTAL OR PURCHASE

REGULAR TRUCK DELIVERY SERVICE THROUGHOUT KANSAS

KANSAS OXYGEN, INCORPORATED
P. O. BOX 551 • HUTCHINSON, KANSAS • PHONE MOHAWK 5-5551

THE LATTIMORE-FINK LABORATORIES

Topeka — El Dorado
Kansas

J. L. Lattimore, A.B., M.D., Pathologist
A. A. Fink, A.B., M.D., Pathologist
Ralph S. McCants, A.B., M.D., Pathologist
H. C. Ebendorf, M.T., Serologist
A. C. Keith, B.S., Chemist
L. W. Hull, A.B., Bacteriologist
Walter Norris, A.B., Chemist

Anatomical and Clinical Pathology

Containers Furnished Upon Request

RENTALS ★ SALES

HOSPITAL BEDS WHEEL CHAIRS
INVALID LIFTS INVALID WALKERS

★ BRACE SHOP ★

Certified orthotist and skilled technicians on duty at all times

PETRO'S SURGICAL APPLIANCES
618-20 Quincy Topeka, Kans. Ph. CE-40207

The Neurological Hospital

2625 West Paseo,
KANSAS CITY, MISSOURI

★ ★ ★

A voluntary hospital providing the care and treatment of nervous and mental patients and associate conditions.

Protection Against Loss of Income From Accident and Sickness as Well as Hospital Expense Benefits for You and All Your Eligible Dependents.

ALL PREMIUMS COME FROM — PHYSICIANS SURGEONS DENTISTS — ALL BENEFITS GO TO

PHYSICIANS CASUALTY & HEALTH ASSOCIATIONS
OMAHA 31, NEBRASKA
Since 1902

Malpractice Prophylaxis

AVOIDING ADMISSIONS AGAINST INTEREST

Specialized Service makes our doctor safer

THE MEDICAL PROTECTIVE COMPANY
FORT WAYNE, INDIANA

Professional Protection Exclusively since 1899

KANSAS CITY Office:
R. E. McCurdy, Rep.
2020 Olathe Blvd., Apt. 305
Tel. Yellowstone 2-8929
(If no answer, call Logan 1-1498)

Everything for the Laboratory

SOUTHWEST SCIENTIFIC CORPORATION

LABORATORY SUPPLIES AND EQUIPMENT

122 South St. Francis Street
Phone 2-0582 Wichita, Kansas

Prosthetic & Orthopedic Appliances

. . . . since 1906

The W. E. ISLE COMPANY

1121 Grand Ave., Kansas City, Mo.

Certified:
• Facility
• Prosthetists
• Orthotists

BA 1-0206

Prairie View Hospital

Newton, Kansas

Emphasizing a therapeutic milieu and psychotherapy. A non-profit psychiatric service of the Mennonite Central Committee.

Index to Advertisers

Ames Company, Inc. 16
Ayerst Laboratories 32

Bristol-Myers Company 30
Burroughs Wellcome and Company, Inc. . . . . 14 and 27

Ciba Pharmaceutical Products, Inc. 18
Coca-Cola Company . . . . . Center section

Farmers and Bankers Life Insurance Company, Center section

General Electric X-ray Department 30

Hanicke, P. W., Manufacturing Company 34

Isle, W. E., Company 36

Kansas City Southwest Clinical Society . . . . Center section
Kansas Oxygen, Inc. 34

Lakeside Laboratories 5
Lattimore-Fink Laboratories 35
Lederle Laboratories . . . . . Center section and 22
Lilly, Eli, and Company 20

Medical Protective Company 35
Merck, Sharp and Dohme, Inc. . . . . 10, 11, and 17
Mississippi Valley Medical Society . . . . . Center section
Munns Medical Supply Company, Inc. 34

Neurological Hospital 35

Parke, Davis and Company . . . . Inside front cover and 3
Petro's Surgical Appliances 35
Physicians Casualty Association 35
Prairie View Hospital 36

Ralph Clinic 24
Riker Laboratories, Inc. . . . . Inside back cover
Robins, A. H., and Company, Inc. . . . . 15, 23, and 29
Roerig, J. B., and Company, Inc. . . . . 8, 25, and 33

Schering Corporation 19
Searle, G. D., and Company . . . . . 7 and 21
Smith-Dorsey 6
Smith, Kline and French Laboratories . . . . . Back cover
Southwest Scientific Corporation 36
Squibb, E. R., and Sons 12
Sutliff and Case Company, Inc. 36

Tutag, S. J., and Company 28

Wallace Laboratories . . . . . 13 and 31
Winthrop Laboratories . . . . . 9, 26, 28, and 32

Our 75th Year . . .
of serving physicians of the Middle West with high quality and rigidly controlled pharmaceutical products.

SUTLIFF & CASE CO., INC.
Pharmaceutical Specialties
PEORIA, ILLINOIS

PENTAFORT

Provides BOTH fast and prolonged vasodilation for practical prophylaxis in angina pectoris.

Combines TWO (Nitroglycerin and Pentaerythritol Tetranitrate) time tested coronary vasodilators in a stable and economical dosage form.

Glyceryl Trinitrate (Nitroglycerin) 1/150 gr.
Pentaerythritol Tetranitrate . . . . 15 mg.
Thiamin Mononitrate . . . . . 5 mg.

SAMPLES ON REQUEST

Alseroxylon less toxic than reserpine

"...alseroxylon is an antihypertensive agent of equal therapeutic efficacy to reserpine in the treatment of hypertension, but with significantly less toxicity."

Ford, R.V., and Moyer, J.H.: Rauwolfia Toxicity in the Treatment of Hypertension: Some Observations on Comparative Toxicity of Reserpine, a Single Alkaloid, and Alseroxylon, a Compound Containing Multiple Alkaloids, Postgrad. Med., January, 1958.

just two tablets
at bedtime

Rauwiloid®
(alseroxylon, 2 mg.)

for gratifying
rauwolfia response
virtually free from side actions

When more potent drugs are needed, prescribe

Riker
LOS ANGELES

Rauwiloid® + Veriloid®
alseroxylon 1 mg. and akavervir 3 mg.
for moderate to severe hypertension.
Initial dose 1 tablet t.i.d., p.c.

Rauwiloid® + Hexamethonium
alseroxylon 1 mg. and hexamethonium chloride dihydrate 250 mg.
in severe, otherwise intractable hypertension.
Initial dose ½ tablet q.i.d.

Both combinations in convenient single-tablet form.

Stormont Medical Library,
State House,
Topeka, Kansas

A desk is not for sleeping

That's why so many physicians prescribe COMPAZINE* for working patients and others who require a tranquilizing agent which won't impair their capacity to think clearly and function normally.

For all-day (or all-night) therapeutic effect with a single oral dose: 'Compazine' Spansule† capsules. Also available: Tablets, Ampuls, Multiple dose vials, Syrup and Suppositories.

Smith Kline & French Laboratories, Philadelphia

pioneers in psychopharmacology

*T.M. Reg. U.S. Pat. Off. for prochlorperazine, S.K.F.
†T.M. Reg. U.S. Pat. Off. for sustained release capsules, S.K.F.